UNIVERSITY OF MICHIGAN
JUL 24 1951
HOSPITAL LIBRARY

Journal OF THE AMERICAN DIETETIC ASSOCIATION

VOL. 27, NO. 7 JULY 1951

DIETARY STUDY METHODS. I. Uses and Abuses of Dietary Study Methods
Helen A. Hunscher and Icie G. Macy

VITAMIN B_{12} IN REPRODUCTION AND LACTATION
Barnett Sure

MATURITY—THE KEY TO MANAGERIAL EFFICIENCY
Jerome A. Gottschalk

PROCEDURES IN PURCHASING CANNED FOODS
Robert C. Proffitt

DETECTING AND ELIMINATING HIDDEN COSTS IN THE FOOD DEPARTMENT
Fern W. Gleiser

STORE VS. DELIVERED MILK AS A SOURCE OF REDUCED ASCORBIC ACID
Arthur D. Holmes

Youth, Beauty, and Yogurt

Effect of Altering Milk Solids Content on the Acceptability of Certain Foods

34th A.D.A. Annual Meeting, Cleveland, October 9-12, 1951

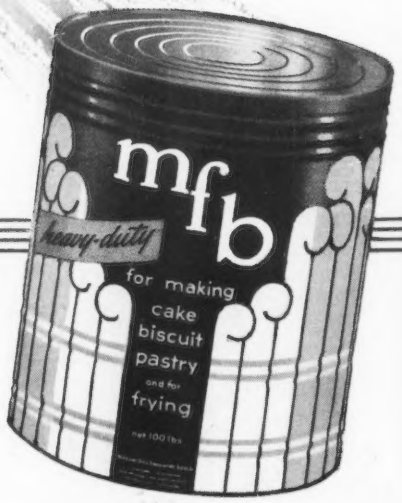
Published by THE AMERICAN DIETETIC ASSOCIATION

PUBLISHING OFFICE: MOUNT ROYAL AND GUILFORD AVENUES, BALTIMORE 2, MARYLAND
EXECUTIVE OFFICES: 836 N. MICHIGAN AVE., CHICAGO 11, ILLINOIS

mfb

heavy-duty

the shortening with the high smoke point



A PRODUCT OF

Shortening SHQ Headquarters

WESSON OIL & SNOWDRIFT SALES CO.

NEW YORK • CHICAGO • SAVANNAH • NEW ORLEANS
SAN FRANCISCO • MEMPHIS • HOUSTON

VOLUME 27
NUMBER 7

Journal OF THE American Dietetic Association

Publishing Office
Mt. Royal and Guilford Aves.
Baltimore 2, Md.

The American Dietetic Association
620 N. Michigan Ave., Chicago 11, Ill.

CONTENTS, JULY 1951

DIETARY STUDY METHODS. I. Uses and Abuses of Dietary Study Methods—*Helen A. Hunscher*, Ph.D., *and Icie G. Macy*, Ph.D., Sc.D. 558

VITAMIN B_{12} IN REPRODUCTION AND LACTATION—*Barnett Sure*, Ph.D. 564

MATURITY—THE KEY TO MANAGERIAL EFFICIENCY—*Jerome A. Gottschalk* 568

PROCEDURES IN PURCHASING CANNED FOODS—*Robert C. Proffitt* 571

DETECTING AND ELIMINATING HIDDEN COSTS IN THE FOOD DEPARTMENT—*Fern W. Gleiser*. 575

STORE VS. DELIVERED MILK AS A SOURCE OF REDUCED ASCORBIC ACID—*Arthur D. Holmes*, Ph.D. 578

EDITORIAL

Youth, Beauty, and Yogurt—*Mary P. Huddleson* 581

CURRENT COMMENT

Effect of Altering Milk Solids Content on the Acceptability of Certain Foods—*Dorothy L. Hussemann*, Ph.D. 583

BOOK REVIEWS 588

CURRENT LITERATURE 590

NEWS NOTES 598

The Journal of the American Dietetic Association is published monthly by The American Dietetic Association, Mt. Royal & Guilford Aves., Baltimore 2, Md., and 620 N. Michigan Ave., Chicago 11, Ill. Neither the Association nor the Editor assumes responsibility for the opinions expressed by authors of papers abstracted, quoted, or published in full in this Journal.

Subscriptions: Rate $6 per year in the U. S., Canada, and countries of the Postal Union; all other countries, $7 per year. Special rate to undergraduate students and dietetic interns in approved internships, $1.50 per year, if order is approved by head of the department. Single copies, 75 cents. All correspondence concerning Journal subscriptions, orders for copies, or reprints from the Journal, and notices of change of address should be sent to The American Dietetic Association, Mt. Royal & Guilford Aves., Baltimore 2, Md., or 620 N. Michigan Ave., Chicago 11, Ill. Notices regarding change of address should reach the publisher by the *23rd of the month before the date of issue* on which the change is to take effect and both old and new addresses should be given. Claims for Journals lost in the mail will not be entertained more than six months after the date of the issue involved.

Editorial Correspondence: All articles and notices for publication, general correspondence, and inquiries should be sent to the Editor at The American Dietetic Association, 620 N. Michigan Ave., Chicago 11, Ill. Manuscripts are accepted for publication on condition that they are contributed solely to the Journal. Copy must be double-spaced and two copies, an original and one carbon, submitted.

Advertising: All correspondence concerning advertising should be addressed to The American Dietetic Association, 620 N. Michigan Ave., Chicago 11, Ill

COPYRIGHT, 1951, BY THE AMERICAN DIETETIC ASSOCIATION Printed in U.S.A.
Entered as second-class matter June 30, 1925 at the Post Office at Baltimore, Md., under the act of August 24, 1912
Published monthly by The American Dietetic Association

OFFICERS, 1950–1951 AMERICAN DIETETIC ASSOCIATION

Headquarters of the Association: 620 N. Michigan Ave., Chicago 11

Coordinating Cabinet

EXECUTIVE BOARD

President, LILLIAN STORMS COOVER, 2121 Hughes Avenue, Ames, Iowa

President-elect, MARGARET A. OHLSON, Michigan State College, East Lansing

Speaker of the House of Delegates, HELEN S. MITCHELL, University of Massachusetts, Amherst

Secretary and Chairman, Membership Committee, MARGUERITE L. PETTEE, The Colorado Medical Center, Denver

Treasurer and Chairman, Finance Committee, WINIFRED H. ERICKSON, Ancker Hospital, St. Paul, Minnesota

SECTION CHAIRMEN

Community Nutrition, MARY REEVES, U. S. Social Security Board, 69 West Washington Street, Chicago

Diet Therapy, CORINNE H. ROBINSON, 90 East Stewart Avenue, Lansdowne, Pennsylvania

Food Administration, MARION D. FLOYD, Hospital Division, U. S. Public Health Service, Washington, D. C.

Professional Education, ALICE BIESTER, University of Minnesota, St. Paul

COUNCIL OF THE HOUSE OF DELEGATES

Speaker of the House of Delegates, HELEN S. MITCHELL, University of Massachusetts, Amherst

Speaker-elect of the House of Delegates, HELEN L. GILLUM, University of California, Berkeley

Secretary of the House of Delegates, LOUISE ESCH, Stanford University Hospitals, San Francisco, California 1951

LUCILLE M. REFSHAUGE, Hartford Hospital, Hartford, Connecticut 1951

HELEN L. GILLUM, University of California, Berkeley 1951

CLARA E. CHILDRESS, Veterans Administration, Washington, D. C. 1951

FRANCES WELCH, Dallas Independent School Lunchrooms, Dallas, Texas 1951

E. NEIGE TODHUNTER, University of Alabama, University .. 1952

DELEGATES-AT-LARGE

MARY M. HARRINGTON, Harper Hospital, Detroit, Michigan 1952

E. EVELYN SMITH, University of Illinois, Urbana 1952

HELEN E. WALSH, State Department of Health, San Francisco, California 1953

A. JUNE BRICKER, Metropolitan Life Insurance Company, New York 1953

Staff

Headquarters Officers

RUTH M. YAKEL, Executive Secretary

MILDRED L. EGEBERG, Business Manager

MARY ELLEN JOHNSON, Assistant to Educational Director

MABLE MACLACHLAN, Educational Director

THELMA POLLEN, Public Relations Director

J. HART ROSDAIL, Accountant, Office Manager

HARRIET E. SANKEY, Managing Editor, Journal

DOROTHEA F. TURNER, Editor, Journal

MARGENE WAGSTAFF, Publications Assistant

DOROTHY WEBER, Placement Bureau Director

CLARA ZEMPEL, Professional Activities Director

ADVISORY BOARD

JAMES W. SHERRILL, M.D., The Scripps Metabolic Clinic, La Jolla, California 1951

FRED G. CARTER, M.D., St. Luke's Hospital, Cleveland, Ohio 1952

L. A. MAYNARD, PH.D., D.Sc., Cornell University, Ithaca, New York 1953

JOURNAL BOARD

DORIS JOHNSON, University of Wisconsin, Madison 1952

CORINNE ROBINSON, 90 East Stewart Avenue, Lansdowne, Pennsylvania 1951

ICIE MACY HOOBLER, Children's Fund of Michigan, Detroit 1951

MARGUERITE J. QUENEAU, Department of Health, State of New York, Albany 1951

MIRIAM LOWENBERG, Rochester Child Health Institute, Rochester, Minnesota 1952

LEVELLE WOOD, Ohio State University, Columbus 1952

WINTRESS DALBEY MURRAY, Eastman Kodak Company, Rochester, New York 1953

BERDENA ROSENOW, University of Kansas Medical Center, Kansas City, Kansas 1953

CHARLOTTE M. YOUNG, Cornell University, Ithaca, New York 1953

PLACEMENT BUREAU BOARD

FRANCES A. SWENSON, Elizabeth Steel Magee Hospital, Pittsburgh, Pennsylvania 1952

EDNA GILBERT, Board of Education, Youngstown, Ohio 1951

ELIZABETH HAYWARD, Las Encinas Sanitarium, Pasadena, California 1951

ELLA M. ECK, University of Chicago Clinics, Chicago 1951

BEATRICE HUGHES HOFSOMMER, Harding Restaurant, 21 South Wabash, Chicago 1952

LUCILLE BACKEMEYER, Residence Halls for Women, University of Nebraska, Lincoln 1952

JEANNE REID, Charity Hospital of Louisiana, New Orleans .. 1953

ALTA B. ATKINSON, Teachers College, New York 1953

UNA ROBINSON, Indiana University, Bloomington 1953

INVESTIGATION BOARD

ETHEL AUSTIN MARTIN, National Dairy Council, Chicago, Illinois 1951

FLORENCE IMLAY, Experiment Station Building, Lexington, Kentucky 1952

THELMA PORTER, The University of Chicago, Chicago 1953

BOARD AND COMMITTEE CHAIRMEN

Awards, Scholarship and Loan Fund, P. MABEL NELSON, Iowa State College, Ames

Constitution, HELEN S. MITCHELL, University of Massachusetts, Amherst

Convention, HELEN ROBERTSON AND CATHERINE H. OPPMANN, Cleveland, Ohio

Dietetic Internship, ALICE BIESTER, University of Minnesota, St. Paul

Educational Exhibits, GERTRUDE AUSTIN, American Institute of Baking, Chicago

History of A.D.A., ANNA BOLLER BEACH, National Live Stock and Meat Board, Chicago

History of Nutrition and Dietetics, E. NEIGE TODHUNTER, University of Alabama, University

Legislation Information, MARGERY VAUGHN, 1321 S. Arlington Ridge Road, Arlington, Virginia

Library, ELIZABETH H. TUFT, Wesley Memorial Hospital, Chicago, Illinois

Nominating, MARJORIE HALL SILER, 1117 Edwards Road, Cincinnati, Ohio

Program Advisory Planning, GRACE BULMAN, Veterans Administration, Washington, D. C.

Publications, HELEN ROBERTSON, Cleveland Plain Dealer, Cleveland, Ohio

Public Relations, REGINA G. FRISBIE, Kellogg Company, Battle Creek, Michigan

Vocational Guidance, LILLIAN O. FRIED, Ann Emery Hall, Madison, Wisconsin.

STATE DIETETIC ASSOCIATIONS AFFILIATED WITH THE AMERICAN DIETETIC ASSOCIATION

ALABAMA: *president*, Mrs. Virginia Ritchie, Alabama Polytechnic Institute, Auburn

ARIZONA: *president*, Norma Sayre, 532 E. Moreland, Phoenix

ARKANSAS: *president*, Mrs. M. Geraldine Getty, Arkansas State Board of Health, Little Rock

CALIFORNIA: *president*, Juanita Kenefick, Children's Hospital, 4614 Sunset Blvd., Los Angeles

COLORADO: *president*, Virginia A. Beal, Child Research Council, Denver 7

CONNECTICUT: *president*, Janina Czajkowski, Extension Service, University of Connecticut, Storrs

DELAWARE: *president*, Mrs. Emily Peters, Veterans Hospital, Wilmington

DISTRICT OF COLUMBIA: *president*, Georgia Smith, Chesapeake & Potomac Telephone Company

FLORIDA: *president*, Marjorie M. Morrison, State Board of Health, Jacksonville

GEORGIA: *president*, Nell Wier, 4 Hibiscus Avenue, Savannah

IDAHO: *president*, Sister Alicia Marie, St. Alphonsus Hospital, Boise

ILLINOIS: *president*, Leila Colwell, Evanston Hospital, Evanston

INDIANA: *president*, Mrs. Kathryn B. Sheedy, Lilly Research Clinic, General Hospital, Indianapolis

IOWA: *president*, Helen Goodenow, Currier Hall, State University of Iowa, Iowa ity

KANSAS: *president*, Virginia Toews, University of Kansas Medical Center, Kansas City

KENTUCKY: *president*, Amy Colescott, Kentucky Baptist Hospital, Louisville

LOUISIANA: *president*, Agnes Blazek, Charity Hospital, New Orleans

MAINE: *president*, Mrs. Caroline Lovejoy, Bangor Hydro-Electric Company, Bangor

MARYLAND: *president*, Mrs. Kathren Shull, 1700 Waverly Way, Baltimore

MASSACHUSETTS: *president*, Mrs. Lillian M. Reiner, Beth Israel Hospital, Boston

MICHIGAN: *president*, Sarah Campbell, Leila Hospital, Battle Creek

MINNESOTA: *president*, Lucille Foss, Eitel Hospital, Loring Park, Minneapolis

MISSISSIPPI: *president*, Mrs. Juanita Miller, Route 1, Boonville

MISSOURI: *president*, Mrs. Marie Harrington, 4030 Chouteau, St. Louis

MONTANA: *president*, Patricia Tutty, St. Vincent's Hospital, Billings

NEBRASKA: *president*, Mrs. Alice F. Higgins, Rogers

NEW HAMPSHIRE: *president*, Clara F. Watkins, Franklin Hospital, Franklin

NEW JERSEY: *president*, Marie Monette, Englewood Hospital, Englewood

NEW MEXICO: *president*, Dorothy B. Hacker, Box 305, Santa Fe

NEW YORK: *president*, Helen C. Hamilton, Corn Products Refining Company, New York City

NORTH CAROLINA: *president*, Virginia Newman, Presbyterian Hospital, Charlotte

NORTH DAKOTA: *president*, Lorraine Witt, 311 S. Third Street, Grand Forks

OHIO: *president*, Mary N. Letherman, Mt. Carmel Hospital, Columbus

OKLAHOMA: *president*, Mary C. Barnes, 716 Jefferson Street, Stillwater

OREGON: *president*, Ann Brownlie, 515 N. E. 15th St., Portland

PENNSYLVANIA: *president*, Esther Atkinson, Pennsylvania State College, State College

RHODE ISLAND: *president*, Frances L. Ware, Rhode Island Hospital, Providence

SOUTH CAROLINA: *president*, Mrs. Anna L. Watson, 1018 Brandon Ave., Columbia

SOUTH DAKOTA: *president*, Sister M. Inez, Sacred Heart Hospital, Yankton

TENNESSEE: *president*, Mrs. Frances Crain, Memphis Dairy Council, Memphis

TEXAS: *president*, Mrs. Loucille Taylor, 3819 Arbor, Houston

UTAH: *president*, Mrs. Helen E. Struble, 379 1st Avenue, Salt Lake City

VERMONT: *president*, Mrs. Theodora Mattison, 76 Greene Street, Burlington

VIRGINIA: *president*, Elizabeth Lounds, Medical College of Virginia, Richmond

WASHINGTON: *president*, Mrs. Eudora Fulkerson, 2719 N. 30th Street, Tacoma

WEST VIRGINIA: *president*, Marian T. McKenzie, Fairmont General Hospital, Fairmont

WISCONSIN: *president*, Ruth Dickie, Wisconsin General Hospital, Madison, Wis.

HAWAII: *president*, Mary Lum, Kapiolani Hospital, Honolulu

Dietary Study Methods

At the 33rd Annual Meeting of The American Dietetic Association held in Washington, D. C., a panel discussion on "Dietary Study Methodology" elicited such interest that the JOURNAL Board recommended publication of the papers in the JOURNAL. The following paper is the first in the series. Other papers will include discussions of:

"The Uses of Dietary Score Cards" by Charlotte M. Young, Ph.D., and Katherine Musgrave, School of Nutrition, Cornell University, Ithaca, New York

"Dietary Study in Community Nutrition Education" by Miriam E. Lowenberg, Ph.D., Rochester Child Health Institute, Rochester, Minnesota

"Dietary History for Use in Diet Therapy" by Elmira Blecha, University Hospital, University of Michigan, Ann Arbor

"Problems in Collecting Dietary Information for Large Groups of Children" by Ercel S. Eppright, Ph.D., Mary Brown Patton, Ph.D., Abby Marlatt, Ph.D., Iowa State College, Ames, and Milicent Hathaway, Ph.D., Bureau of Human Nutrition and Home Economics U. S. Department of Agriculture, Washington, D. C.

A sixth paper was also fundamental to the panel discussion—that by Bertha S. Burke, Harvard School of Public Health, Boston, on "The Dietary History for Use in Research." However, since the material included in the oral presentation has recently been published (Burke, B.S.: The dietary history as a tool in research. J. Am. Dietet. A. 23: 1041, 1947), the JOURNAL Board felt that because of space limitations, duplication at this time would be unnecessary. Interested readers are urged to refer to Mrs. Burke's paper as an important contribution and an integral part of the series.

The panel discussion from which these papers have been derived was the culmination of work by the Committee on Dietary Study Methods of The American Dietetic Association[1], first appointed in 1947 for the purpose of studying and evaluating the advantages and limitations of some of the current methods of determining food consumption as distinguished from nutritional status of individuals and population groups. In writing about the work of the Committee, Icie Macy Hoobler, Ph.D., Sc.D., Chairman, says:

"There are two reasons for determining nutrient intake: (a) to learn the food intake of individuals and (b) to obtain information about food patterns and actual food intake of population groups. Such studies are approached by chemical procedures and by inquiry methods. In between the extremes of these two approaches, there are many types of studies with varying degrees of precision and usefulness. But, with the concept of usefulness, there must also be a realization of the limitations. Many of these methods will tell us *what* people eat, if not the *amount*. The degree of precision of the (a) analytical, (b) inquiry, and (c) combination methods varies, depending on the method used and the refinement with which it is applied. At present, there is no all-purpose *best* method for determining nutrient intake of individuals or population groups. The method chosen will depend on the need or purpose of the study.

"The initial work of the Committee on Dietary Study Methods included an assembly of the facts, sources of errors, and relative merits of some of the methods of obtaining dietary information. These served as the background material for the panel discussion and the critiques and deliberations which will be published in the JOURNAL. The objective in presenting these papers has been to review some of the basic principles upon which each method rests rather than to present new methods and specific refinements for the use of 'specialists.'

"If the profession initiates a more aggressive attack on the development of new and suitable methods for determining more precisely nutrient intake of individual and population groups or in the refinement of the old methods, then the purpose of the Committee will have been fulfilled."

---

[1] Members of the Committee are: Elmira E. Blecha, Bertha S. Burke, Ercel S. Eppright, Ph.D., Helen A. Hunscher, Ph.D., Miriam E. Lowenberg, Ph.D., Thelma Porter, Ph.D., Charlotte M. Young, Ph.D., and Icie Macy Hoobler, Ph.D., Sc.D., Chairman.

Dietary Study Methods

I. Uses and Abuses of Dietary Study Methods

HELEN A. HUNSCHER, Ph.D., and ICIE G. MACY, Ph.D., Sc.D.

Home Economics Department, Western Reserve University, Cleveland, and *Research Laboratory, Children's Fund of Michigan, Detroit*

RECENTLY it was cogently stated (1): "Planning studies of the dietary intakes of any population group is complex and involves knowledge of many important factors in addition to the mere chemical composition of foods. Many of the limitations imposed upon dietary studies by these factors have now been determined. For an individual or group to undertake additional investigations of the diets of populations without familiarizing themselves with the background of knowledge which we now possess, will result in needless waste of effort and funds and will continue to introduce erroneous conclusions into the literature of nutrition." The American Dietetic Association, with its specific objective of improving the nutritional status of human beings and raising standards in dietetic services, is aware of its responsibility for assuming an aggressive leadership in developing and applying improved methods of determining the nutritive value of food eaten by individuals and population groups.

The dietitian or nutritionist participating in one of the many different types of dietary studies, whether applied in community nutrition, diet therapy, food administration, or professional education must be familiar with its limitations as well as its advantages. The alert and ambitious individual will keep abreast of the rapidly accumulating knowledge and will possess the latest information regarding sources of errors and the relative merits of current procedures for obtaining various kinds of dietary information. A current background will serve her well by permitting active, effective participation in the planning and execution of investigations devised to accomplish specific purposes within the bounds of available man hours, money, equipment, and space. Especially in supervisory positions, basic knowledge is necessary for proper utilization of methods involving the collection of accurate dietary data and in its evaluation and interpretation.

The present necessity for greater standardization of methods for determining and evaluating nutritive intakes arises from: (a) the vastly accelerated tempo of research, (b) the increased variation in presentation of results in the literature, and (c) the need for more rapid translation of experimental knowledge into applications in medicine, public health, and education.

FOOD COMPOSITION

One of the greatest handicaps in coping with dietary and nutritional problems has been our incomplete knowledge of the composition of foods generally used in our daily diets. The increasing demand for expanded information and the discrepancies among the many so-called standard tables of food composition have emphasized anew the need of a single reference table for national and international use, indicating not only calories and proximate composition, but also the minerals and vitamins provided by the individual foods.

The proximate composition of some American foods as determined by Atwater was first published by the United States Department of Agriculture in 1899 (2), then revised (3) in 1906. The Atwater food composition tables were revised and enlarged in 1940 by Chatfield and Adams (4). New foods were included, a larger number of constituents were reported for each food, and the changes effected in the processing of foods were considered.

Other tables of food composition were developed, and World War II made necessary the compilation of a single food table giving the contents of calories, protein, fat, carbohydrate, minerals, and vitamins. The Committee on Food Composition of the Food and Nutrition Board, National Research Council, in cooperation with the United States Department of Agriculture, undertook this task, and in 1945, Bulletin 572 of the Bureau of Human Nutrition and Home Economics (5) was published, presenting data on the amounts of nutrients in 275 foods.

Growing momentum of research and acceleration in education during the postwar years resulted in the publication of the United States Department of Agriculture Handbook No. 8, *Composition of Foods—Raw, Processed, Prepared* (6) by Watt and Mer-

rill in 1950. Though this table provides values for fifteen nutrients in 751 foods, specific factors developed for individual foods or food groups were used in calculating energy values rather than the traditional factors of 4, 9, 4, for protein, fat, and carbohydrate, respectively. This important difference must be considered by anyone using the table to evaluate foods or dietaries or to obtain comparative values. Our knowledge of the composition of many of the natural and processed foods used in daily menus is still woefully inadequate. Some sixty nutrients are used in the structure and physiologic functioning of the human body: many of these which are known to be essential for life and health must be obtained directly from foods. While the functions of these nutrients are not completely understood, no doubt others remain undiscovered. Vigorous efforts should be made to enlarge our knowledge of food composition to encompass a greater number of components, in varieties of foods from many parts of the world.

With the accumulation of data on the chemical composition of foods, carefully sampled and analyzed by highly refined and accurate methods, it has become increasingly apparent in recent years that common foods vary widely in composition. Hence, a given diet must be analyzed under the precise condition of the experiment at hand, if the values for the nutrients are to be used with any assurance of close accuracy. This implies no criticism of the validity of the analyses represented in tables of food composition, but merely recognizes that there are wide differences in composition of the same foods at different times and under varying conditions. With fruits and vegetables, these discrepancies have been attributed to ripeness, species, type of soil, mode of cultivation, amount of water available, geographic origin, and marketing conditions. Attempts to correlate the variations in foods have been made, but our information is far from complete.

DETERMINATIONS OF NUTRITIVE INTAKE

The most exacting of dietary methods consists of obtaining accurate results of chemical analyses of food representing the diet actually consumed by individuals. The value of such data depends to a large degree upon the precision of the sampling and evaluation procedures employed. Numerous methods are in vogue for determining the chemical components of dietaries, the choice among them usually being governed by the resources available—financial, laboratory, and personnel. An investigator may: (a) estimate the amount of each of the chemical components in a diet from the raw weights of edible portions of the individual foods, using average values found in tables of food composition in the literature; (b) analyze chemically samples of the individual foods used in the diet and, with the weights of the amounts of each food eaten, calculate the nutritive values of the diet; (c) analyze a mixed diet identical in weight and preparation to that consumed by the experimental subject; (d) analyze a mixture of aliquot portions of each raw food obtained at the time the diet is prepared; or (e) obtain aliquot portions of each food after meals are prepared, combine them in a composite representative of the diet for a period of time, and analyze samples of the composite. These various methods provide values of widely differing accuracy; in comparing data obtained by two of the methods, greater precision cannot be ascribed than the least-accurate method. For many purposes, general conformity suffices, but when close comparison is desired, the non-conformity of methods frequently makes it difficult to compare results obtained in different laboratories.

SAMPLING FOODS AND DIETS

Since there are unavoidable variations among identically prepared samples of raw foods, it is possible that, despite great care in the preparation of duplicate diets, the diet analyzed chemically may be quite different in composition from the one ingested by the subject. In addition to the inherent variability of foods as purchased, losses of organic and inorganic components may result from methods of storage, preparation, and cooking. Preparation of food in ways which minimize losses of nutritional value gives assurance of consumption of the maximum amounts of nutrients in the food. Data even more representative of the nutrients ingested by individuals are obtained in some instances by sampling a food after preparation for serving and in other instances by applying the same preparation procedures to both the diet to be eaten and the one to be analyzed.

It would be ideal if specimens of all foods could be obtained at the time of consumption and analyzed each day, but the expenditures of resources in such an effort would be enormous. To effect reductions in the numbers of analyses required and yet obtain the advantages of chemical determinations over calculation of dietary composition, food samples may be collected for specific time periods, consecutively or intermittently throughout a study. Proper sampling and storage procedures permit accumulation of aliquots of all food in a diet for periods of one, five, ten, or more days in a composite for which analytical values will represent the food eaten during that time. Even with the greatest efforts to keep a dietary constant from day to day, the variation in the composition of individual foods would make results of analyses of the food intake for one or more days at intervals during a study less representative.

Some samples must be analyzed in the wet state, others in the dry. The care with which the samples are measured, and with which oxidation and bacterial action are prevented pending analysis contributes greatly to the accuracy of the results. Equal care must be employed throughout the analytical procedures, for elements such as nitrogen, sulphur, and

chlorine are dissipated in the open-air, heat-drying process; constituents such as fatty acids may be decomposed; and still others may be changed to such an extent that accurate analyses become impossible. Since analytical values also include the errors arising from collecting and sampling of foods, it is essential to exert every effort to simplify, standardize, and apply the most accurate available techniques, thus minimizing all possible sources of error, if the data are to have scientific merit. Sporadic observations of too short duration, poorly organized procedures of collecting and handling dietary material, and unsatisfactory methods of chemical analysis, either singly or in combination, may not only forfeit the most sanguine explanation of nature's behavior, but may actually lead one astray, into drawing unwarranted conclusions.

DIETARY STUDIES

In planning any study, the first requisite is a clear delineation of the purposes for which it is designed and the degree of accuracy necessary to accomplish the objectives. This requirement must be reconciled with proper application within the framework of available resources of time, finances, space, personnel and equipment. Some research studies require precision, making it necessary to determine accurately by analyses the constituents of food eaten by an individual. In less exacting studies, it may be satisfactory to estimate approximate dietary intakes by using standard tables of food composition, greater accuracy being attained by weighing or measuring all specimens of foods eaten over a given period of time than by estimates of quantities. The estimated weight of food from the apparent size of serving, however, may vary widely among individual observers and be reflected in standard tables of food composition. For example, one table may list "apple (raw, large)" as weighing 230 gm.; another, 150 gm. Furthermore, there are psychologic hazards in any estimate of quantity of food. In planning experimental studies and in evaluating the reliability which may be attributed to values derived with "standard" tables of food composition, the advice of a statistician is of great value in avoiding efforts which will not produce usable data and in assuring that diets based on calculations will be nutritionally adequate.

In using current standard tables of composition, it must be remembered that the values therein are based upon *analytical values* determined for the nutrients in a given food and subject to all the variations and errors involved in the analyses. The investigator must possess knowledge of the assets, limitations, methods of derivation, and significance of the data in tables of food composition when using them to evaluate diets. Although the calculation may be accurate, the wide variations in the composition of foods and the losses incurred in processing and preparation for consumption make the figures recorded in present-day food composition tables merely guide posts; they must be supplemented by analytical values if one is to know the reliability of estimated dietary intakes within a given locality or for a special group. The dietitian should not be misled in applying existing food tables into overconfidence in calculated results because *an actual figure* from a food table was used in estimating the nutrient content of a diet. In many problems it is important to compare chemical determinations of dietary intake with calculated values merely to know within what range the calculated values may safely be judged reliable. This knowledge is especially important in planning therapeutic diets or diets for vulnerable groups.

EVALUATION OF DIETARIES

The practicing dietitian, whether serving in the school lunch program, in a hospital, in industry, in research, or in another capacity must keep a current record of the nutrient values of the foods she serves. As in all sciences, there is no place for guesswork; the successful dietitian must maintain a vigilant effort at all times to apply the most accurate and efficient dietary methods permitted by existing circumstances and resources. In using any table of food composition, the well-informed dietitian will search out information regarding the collection and compilation of the values to know the considerations involved in using them. There may be considerable differences between the proximate composition of a diet as determined from a standard table of food composition, the usual dietetic practice, and the value for protein, fat, and carbohydrate determined by analyses (Table 1).

The method followed in calculating the caloric value of the energy-yielding components of the diet is important and may lead to unanticipated results.

TABLE 1

Calculated and determined protein, fat, and carbohydrate in the diet of a twelve-year-old boy

FOOD	PROTEIN		FAT		CARBOHYDRATE	
	Calculated*	Determined†	Calculated*	Determined	Calculated*	Determined‡
	gm.	*gm.*	*gm.*	*gm.*	*gm.*	*gm.*
Cereal	14.4	15.1	5.3	3.2	101.8	105.2
Butter, milk, and cheese	22.2	19.7	86.0	81.2	24.8	30.7
Animal products	35.2	33.2	19.5	19.8	0.7	2.7
Fruits and vegetables	13.5	13.2	9.2	8.1	101.8	92.9
Sugar and honey	0.1	—	—	—	34.2	34.7
Total	85.4	81.2	120.0	112.3	263.3	266.2

* Using standards for individual foods as given by Sherman (8).

† Analytical values for nitrogen × 6.25.

‡ Dry weight of intake minus weight of protein, fat, and minerals.

Evaluation of the plane of nutrition provided by a diet depends upon: (a) whether the heat of combustion has been determined or fuel values have been calculated; (b) in calculations, whether the results are obtained from a standard table of food composition or are based upon application of fuel values to the amounts of protein, fat, and carbohydrate in the dietary; (c) in the latter instance, whether the protein, fat, and carbohydrate were determined by analysis or obtained from a table of food composition; (d) whether fuel values used for protein, fat, and carbohydrate were those for heat of combustion, 5.65, 9.45, and 4.1, respectively, or those for physiologic fuel value, 4, 9, 4, respectively; (e) what allowances, if any, have been made for waste in preparation and losses in digestion; (f) if the heat of combustion has been used, whether any allowances have been made for losses in urine and feces. Investigators often fail to record the precise methods used in determining the fuel value of a diet. In an adequate mixed diet of generous proportions, a difference of even a few calories may be followed by nutritional repercussions in: (a) patients receiving therapeutic diets if the food distribution is limited or the diet is composed of foods of low food value; (b) in vulnerable groups with restricted incomes; (c) in pregnant and lactating women; and (d) in rapidly growing children.

TABLE 2

*Comparison of methods of determining the energy value of diets**

METHOD OF DETERMINATION	HEAT OF COMBUSTION	PHYSIOLOGIC FUEL VALUE
Child A		
	calories	*calories*
Calorimetric determination	2187‡	1980‡
Chemical determination†	2277‡	2080‖
Calculated value	2362¶	2157‖
Child B		
Calorimetric determination	2500‡	2289‡
Chemical determination†	2605 #	2391‖
Calculated value	2694¶	2473‖

* Methods of determining the energy value of diets are compared by applying the methods to the diets given to two boys during a fifty-five-day period. Child A, nine years old; Child B, twelve years old.

† Chemical determination of protein, fat, and carbohydrate in the diets. Protein was determined by applying the factor 6.25 to the results of nitrogen analyses. Carbohydrate was determined by difference; dry weight of entire diet minus (weight of protein, fat, and minerals).

‡ Oxygen bomb calorimeter determination of intake. By applying the same method of determination to urine and feces and subtracting their heat of combustion from that of the intake, a measurement may be obtained of the physiologic fuel value (net calories) of a specified diet to definite individuals for a given interval.

Factors for heat of combustion of protein, fat, and carbohydrate—5.65, 9.45, and 4.1, respectively—applied to chemically determined protein, fat, and carbohydrate contents of the diet.

¶ Calculated by applying factors for heat of combustion of protein, fat, and carbohydrate—5.65, 9.45, and 4.1, respectively—to the amounts of each constituent in the individual foods as given by Sherman's (8) tables.

‖ Factors (Atwater-Bryant [3]) for physiologic fuel value of protein, fat, and carbohydrate—4, 9, and 4, respectively—applied to protein, fat, and carbohydrate contents of diet.

To illustrate the importance of considering the various methods of determining the energy value of a day's food supply, Table 2 shows the results of six calculations of energy in the diets of two boys of different age and body build. Protein of animal origin composed 65 per cent of the dietary protein; 35 per cent was from vegetable sources. Of the total caloric intakes, 49 and 54 per cent were obtained from animal sources for the nine- and twelve-year-old boys, A and B, respectively. Rubner (7) found an 8 to 10 per cent energy loss in the process of digestion. In the two boys, the loss through the urine was 4.0 per cent of the determined caloric intake, and 5.4 and 4.4 per cent was lost in the feces, totalling 9.4 and 8.4 per cent loss in digestion. Results of all three methods of determining the heat of combustion and the physiologic fuel value of the food intakes conform with Rubner's estimate of 8 to 10 per cent loss during digestion. Application of the heat of combustion factors (5.65, 9.45, 4.1) to chemically determined amounts of protein, fat, and carbohydrate in the diets resulted in values 4 per cent higher than obtained by calorimetry; the same factors used with published values for the protein, fat, and carbohydrate of the individual foods may yield results 8 per cent higher than calorimeter values.

Ten calories daily per kilogram of body weight may spell success or failure insofar as chemical growth in children is concerned (9). In nursing mothers a variation of 200 to 500 calories per day in the estimation

TABLE 3

Comparison of analyzed values with estimations from three standard tables*

METHOD OF CALCULATION	VITAMIN A		
	1st day's intake	2nd day's intake	3rd day s intake
	I.U.	*I.U.*	*I.U.*
Analyzed†	341	1014	1374
Estimated			
Table 1	1238	948	3631
Table 2	852	1297	2759
Table 3	1156	887	3648

* Daily values.

† Micrograms of vitamin A × 4.3, plus micrograms of carotene ÷ 0.6.

of a marginal diet may, over a period of time, mean the difference between success and failure in satisfying the nutritive needs of the baby and in the maintenance of the maternal body weight.

The differences between the analyzed and calculated values of diets with respect to nutrients other than energy are equally important considerations for the dietitian. Food composition tables may differ markedly in values recorded for the same food. Table 3 contrasts values for vitamin A determined by analyses of the diets eaten by a boy on three different days with the values obtained by estimation from three standard tables of food composition. It is evident that different evaluations of the adequacy of the diets with respect to vitamin A would be obtained from each of the standard tables and that the interpretation would vary with the individual's level of intake as well as with the distribution of foods in the diet.

The estimation of the nutritive values of food eaten is one of the many important phases in the evaluation of nutritional status. Dietary intake, however, must not be confused with nutritional status. No matter how much one learns about dietary nutrients in the food, all one can estimate is dietary intake and the investigator cannot from such data alone determine nutritive status, which also involves the condition of the person who consumes the food. However, an estimation of dietary intake is essential in any interpretation of measurements of nutritional status, which also have limitations, but a better assessment of dietary intake contributes to more precise evaluation of nutritional status.

SUMMARY

The responsibilities of the dietitian are many. Whether the line of duty is one of keeping a running inventory of nutrients provided in a school lunchroom, of evaluating dietary intake for purposes of therapy, of distributing a new food product, or of research, there are numerous potentially hazardous pitfalls. Those members qualified to be standard bearers of the dietetic profession will keep abreast of the fast moving outflow of scientific literature pertaining to the composition of foods, the factors affecting nutritive quality and utilization, and ways and means of best collecting and sampling diets for estimation or analysis; they will be alert to the advantages and limitations of the different types of interpretation of the data collected, and will draw only warranted conclusions.

Meredith recently stated (10): "Scientific generalization clearly is serious business—yet it must be engaged in by every investigator. Science centers in generalization and no genuine scientist can sidestep this function. An attempt must be made to chart a course between evasion and error. How is this to be done? First, by laying the groundwork well. By proceeding step by step with precise statement of the problem, selection of an adequate sample, rigorous collection of valid data, and appropriate analysis of the data amassed. Secondly, by developing a cautious, critical approach to generalization. By acting on the realization that sound generalization—the formulating of some truth (however infinitesimal that truth may be)—is a task which merits unstinted care, thought, and precision."

CITED REFERENCES

(1) Some limitations of technics for dietary study. Nutrition Rev. 7: 343, 1949.

(2) Atwater, W. O.: Discussion of the Terms Digestibility, Availability, and Fuel Value. 12th Ann. Rep. Storrs Agric. Exper. Sta. 69, 1899.

(3) Atwater, W. O., and Bryant, A. P.: The Chemical Composition of American Food Materials. U. S. Office Exper. Sta. Bull. No. 28, 1906.

(4) Chatfield, C., and Adams, G.: Proximate Composition of American Food Materials. U.S.D.A. Circ. No. 549, 1940.

(5) Bureau of Human Nutrition and Home Ecomomics in cooperation with National Research Council: Tables of Food Composition in Terms of Eleven Nutrients. U.S.D.A. Misc. Pub. No. 572, 1945.

(6) Watt, B. K., and Merrill, A. L.: Composition of Foods—Raw, Processed, Prepared. U.S.D.A. Handbook No. 8, 1950.

(7) Rubner, M., and Thomas, K.: Die Ernahrung mit Kartoffeln. Arch. f. Anat. u. Physiol. Physiol. Abteilung. Jahrgang 1918: 1, 1919.

(8) Sherman, H. C.: Chemistry of Food and Nutrition. 6th ed. New York: Macmillan Co., 1941.

(9) Macy, I. G., and Hunscher, H. A.: Calories—a limiting factor in the growth of children. Submitted for publication.

(10) Meredith, H. V.: The research worker's responsibility for generalization. Phys. Educator, May, 1950.

OTHER SELECTED REFERENCES

Adams, G.: Some problems of sampling; food composition. J. Home Econ. 39: 94, 1947.

Bassett, S. H., and Van Alstine, H. E.: Mineral exchanges of man. 4. Variations in the mineral content of diets with a constant raw weight formula. J. Nutrition 9: 175, 1935.

Blecha, E.: Dietary study methods. 4. Dietary history for use in diet therapy. J. Am. Dietet. A., in press.

Bransby, E. R., Daubney, C. G., and King, J.: Comparison of results obtained by different methods of individual dietary survey. Brit. J. Nutrition 2: 89, 1948.

Bransby, E. R., Daubney, C. G., and King, J.: Comparison of nutrient values of individual diets found by calculation from food tables and by chemical analysis. Brit. J. Nutrition 2: 232, 1948.

Burke, B. S.: The dietary history as a tool in research. J. Am. Dietet. A. 23: 1041, 1947.

Committee on Maternal and Child Feeding: The Composition of Milks. National Research Council Bull. No. 119, January, 1950.

Committee on Nutrition Surveys, Food and Nutrition Board: Nutrition Surveys, Their Techniques and Value. National Research Council Bull. No. 117, May, 1949.

Dann, W. J., and Darby, W. J.: The appraisal of nutritional status (nutriture) in humans with especial reference to vitamin deficiency diseases. Physiol. Rev. 25: 326, 1945.

DARBY, W. J.: The influence of some recent studies on the interpretation of the findings of nutrition surveys. J. Am. Dietet. A. 23: 204, 1947.

FOOD AND AGRICULTURE ORGANIZATION: Energy-Yielding Components of Food and Computation of Calorie Values. Washington: Nutrition Division, Food and Agriculture Organization, May, 1947.

FOOD AND AGRICULTURE ORGANIZATION: Calorie Requirements. Washington: Nutrition Division, Food and Agriculture Organization, June, 1950.

GUTMAN, A. B., AND LOW, M.: On the approximation of the calculated to determined calcium content of human dietaries. J. Nutrition 18: 257, 1939.

HARRINGTON, M. M., CUMBOW, R., THOMAS, R. U., METZ, H., RUTLEDGE, M. M., AND MACY, I. G.: Nutritional status of children. 9. Feeding practices in child-caring agencies. J. Am. Dietet. A. 26: 241, 1950.

HUMMEL, F. C., SHEPHERD, M. L., GALBRAITH, H., WILLIAMS, H. H., AND MACY, I. G.: Chemical composition of twenty-two common foods and comparison of analytical with calculated values of diets. J. Nutrition 24: 41, 1942.

HUNTER, G., KASTELIC, J., AND BALL, M.: Assessment of diets: analysis versus computation from food tables. Canad. J. Res. 26: 367, 1948.

JOLLIFFE, N., TISDALL, F., AND CANNON, P.: Clinical Nutrition. New York: Paul B. Hoeber, Inc., 1950.

KASER, M. M., STEINKAMP, R. C., ROBINSON, W. D., PATTON, E. W., AND YOUMANS, J. B.: A comparison of the calculated and determined calorie and vitamin contents of mixed diets. Am. J. Hyg. 46: 297, 1947.

KEYS, A.: The calorie requirement of adult man. Nutrition Abstr. & Rev. 19: 1, 1949.

KON, S. K., AND MAWSON, E. H.: Human Milk. Wartime Studies of Certain Vitamins and Other Constituents. Medical Research Council Special Report Series No. 269. London: H. M. Stationery Off., 1950.

MCCANCE, R. A., AND WIDDOWSON, E. M.: The Chemical Composition of Foods. 3rd impression. London: H. M. Stationery Off., 1942.

MACK, P. B.: Calories Make a Difference. New York: Sugar Research Foundation, Inc., 1949.

MACY, I. G.: Nutrition and Chemical Growth in Childhood. 1. Evaluation. Springfield, Ill.: Charles C Thomas, 1942.

MAINLAND, D.: Statistics in clinical research: some general principles. Ann. New York Acad. Sc. 52: 922, 1950.

MAYNARD, L. A.: The Atwater system of calculating the caloric value of diets. J. Nutrition 28: 443, 1944.

Methodology of dietary surveys. Nutrition Rev. 9: 68, 1951.

MICKELSEN, O., MILLER, E. V. O., KEYS, A., AND MITCHELL, H. H.: The determination of fat and its relation to the calculated caloric value of diets. J. Am. Dietet. A. 23: 952, 1947.

MOREY, N. B.: An analysis and comparison of different methods of calculating the energy value of diets. Nutrition Abstr. & Rev. 6: 1, 1936.

PATTERSON, J. M., AND MCHENRY, E. W.: Errors in the calculation of nutritive value of food intake. 1. Comparison of calculated and determined amounts of calories, protein and fat. Canad. J. Pub. Health 32: 362, 1941.

PETT, L. B.: Limitations in the use of dietary standards. Differences in American, British, and Canadian standards. J. Am. Dietet. A. 27: 28, 1951.

REID, D. D.: Statistics in clinical research. Ann. New York Acad. Sc. 52: 931, 1950.

SEMMONS, E. M., AND MCHENRY, E. W.: Errors in the calculation of the nutritive value of food intake. 4. Comparison of calculated and determined amounts of calcium. Canad. J. Pub. Health 35: 286, 1944.

THOMAS, R. U., RUTLEDGE, M. M., MOYER, E. Z., MILLER, O. N., ROBINSON, A. R., CORYELL, M. N., METZ, H., BEACH, E. F., AND MACY, I. G.: Nutritional status of children. 12. Evaluation by computing the food intake of a group and by weighing and analyzing foods eaten by representative subjects. J. Am. Dietet. A. 26: 788, 1950.

THOMAS, R. U., RUTLEDGE, M. M., BEACH, E. F., MOYER, E. Z., DRUMMOND, M. C., MILLER, S., ROBINSON, A. R., MILLER, O. N., CORYELL, M. N., AND MACY, I. G.: Nutritional status of children. 13. Accuracy of calculated intakes of food components with respect to analytical values. J. Am. Dietet. A. 26: 889, 1950.

TURNER, D.: Handbook of Diet Therapy. Chicago: The University of Chicago Press, 1946.

WARD, M., HAWLEY, I., THOMAS, R. U., AND METZ, H.: Nutritional status of children. 10. Feeding practices in child-caring agencies: Communal feeding of adolescent boys. J. Am. Dietet. A. 26: 421, 1950.

WIDDOWSON, E. M., AND MCCANCE, R. A.: Food tables. Their scope and limitations. Lancet 244: 230, 1943.

WIDDOWSON, E. M.: A Study of Individual Children's Diets. Privy Council, Medical Research Council Special Report Series No. 257. London, 1947.

YOUNG, C. M., AND MCHENRY, E. W.: Errors in the calculation of the nutritive value of food intake. 2. Comparison of calculated and determined amounts of ascorbic acid. Canad. J. Pub. Health 33: 224, 1942.

YOUNG, C., AND MUSGRAVE, K.: Dietary study methods. 2. Uses of dietary score cards. J. Am. Dietet. A., in press.

A.M.A. Defines "Wholesome Food"

"A wholesome food is a product which makes a significant contribution to human dietary requirements and which is clean and free from micro-organisms and chemical additives of such quality or in such quantities that they may be directly injurious or result in reduced nutritional quality.

"Wholesome foods must be clean and free from extraneous matter that may be incorporated as the result of careless or uncleanly methods of growth, storage, or processing. Although micro-organisms which contribute to the value of a food may be incorporated intentionally or accidentally, disease-producing organisms have no place in foods for human consumption.

"Although these basic concepts have acquired general recognition, the development recently of a large number of chemical technologic aids has emphasized the necessity for reexamining our idea of a wholesome food, particularly from the point of view of its freedom from chemical additives which may be harmful to the consumer because of toxicologic effects or because their incorporation in food causes or makes possible the reduction of nutritive value."—*J.A.M.A. Council on Food and Nutrition 146: 477 (June 2), 1951.*

Vitamin B_{12} in Reproduction and Lactation[1]

BARNETT SURE, Ph.D.

Department of Agricultural Chemistry, University of Arkansas, Fayetteville

DURING the past four years, several attempts were made in this laboratory to obtain successful lactation on diets, the proteins of which were derived from 30 to 50 per cent low-fat soybean flour.[2] These rations furnished 15 to 25 per cent proteins and were adequate in all dietary essentials for good growth of the rat, but resulted in poor reproduction and complete failure of lactation. Most of the young died during the first two to three days of lactation. Emerson, Wurtz, and Zanetti (1) have made a preliminary report indicating a beneficial effect in lactation as a result of supplementing with vitamin B_{12} a diet, the proteins of which were furnished by 60 per cent soybean meal. Sica, Allegeier, and Cerecedo (2) and Maruyama and Phillips (3) have also reported favorable effects of folic acid in reproduction and lactation. Thus, we were stimulated to continue our investigations with soybean flour in the presence of vitamin B_{12} and/or folic acid from the standpoint of reproduction and lactation.

EXPERIMENTAL PROCEDURE

This study was conducted with the Wistar strain albino rat. The animals were about thirty days of age when started on the experiments and weighed 50 to 58 gm. each. Soybean flour, which contained 50 per cent protein (N × 6.25), was the source of proteins in the rations and was fed at 50 and 60 per cent planes of intake, introducing 25 and 30 per cent proteins in the rations respectively. The rations contained 2 per cent Cellu flour as a source of roughage, 8 per cent vegetable shortening, and Sure's salt mixture No. 1 (4) in the 50 per cent ration and 3 per cent salts in the 60 per cent soybean flour ration. The fat-soluble vitamins A, D, and E were provided by 3 per cent wheat germ oil and 2 per cent cod-liver oil in the rations supplemented by a tocopherol concentrate and halibut liver oil, given separately from the rations during the reproduction and lactation periods as follows:

HALIBUT LIVER OIL

Females: during pregnancy, 6 drops per animal twice a week which was increased to 6 drops three times a week during lactation.

Males: during breeding periods, 6 drops once a week.

TOCOPHEROL CONCENTRATE (34 per cent tocopherol, 1 drop of which is equivalent to 8 mg. vitamin E)

Females: during pregnancy, 2 drops per animal twice a week which was increased to 2 drops three times a week during lactation.

Males: during the breeding periods, 2 drops once a week.

The B-complex, which was administered daily to each animal (except Sundays) separately from the ration, had the following composition: thiamine, 25 mcg.; riboflavin, 25 mcg.; pyridoxine, 25 mcg.; niacin, 25 mcg.; calcium pantothenate, 150 mcg.; para-aminobenzoic acid, 3 mg.; inositol, 1 mg.; and choline chloride, 6 mg. A ration containing 50 per cent soybean flour was found by analyses to contain 11.5 mcg. thiamine per gram and 4.7 mcg. riboflavin per gram. According to Burkholder (5), soybeans contain 12 mcg. pantothenic acid per gram, 20 mcg. niacin per gram, 6.4 mcg. pyridoxine per gram, and 0.61 mcg. biotin per gram. A lactating rat eating about 20 gm. daily should then have had an abundance of the known B vitamins during the nursing period with the exception of vitamin B_{12} and folic acid. The daily doses of vitamin B_{12} used for growth were regulated by the experiences of Hartman, Dryden, and Cary (6). The doses for reproduction were doubled and the doses for lactation were five times those used for growth. It was also felt that, since vitamin B_{12} has been found to be effective in pernicious anemia when given in daily doses measured in micrograms (7–9), the requirements of the albino

---

[1] This is paper XXXIV in the series "Dietary Requirements for Reproduction and Lactation." Research paper No. 933, Journal Series, University of Arkansas. Published with the approval of the Director of the Arkansas Agricultural Experiment Station. Received for publication August 2, 1950. A preliminary report of this study was presented before the American Institute of Nutrition in Atlantic City on April 19, 1950.

[2] Organic solvent extracted and supplied by the Archer-Daniels-Midland Company, Minneapolis, under the trade name "Nutrisoy."

rat should be met for all physiologic functions if doses were measured in tenths of micrograms. The following daily doses[3] were therefore given to the animals: 0.1 mcg. for growth; 0.2 mcg. for reproduction, and 0.5 mcg. for lactation. Sica and associates (2) found 80 mcg. daily the optimum dose of riboflavin for the nursing rat. This appears very high, since it is synthesized in sufficient amounts for growth of the rat (10) and 5 mcg. daily is sufficient to cause remission on a diet containing 2 per cent succinyl sulfathiazole (11). However, we followed the experiences of Sica *et al.* (2) and adopted this high dose of riboflavin for lactation, a daily dose of 50 mcg. for reproduction, and a 20-mcg. dose for growth.

The experiments were conducted in groups of 18 animals—3 males and 15 females in each group. The females were bred at twelve weeks of age, when they weighed 155 to 160 gm. The criteria for success in reproduction were number of young born alive, vigor of young (determined by birth weights and ability to suckle during the critical period of the first three days of lactation), and continuous fertility or fecundity. Efficiency of lactation was evaluated by the percentage of young given to rear which were successfully weaned and by the length of the lactation period, which normally should be twenty-one to twenty-five days. The young should weigh at least 40 gm. each at the end of such lactation period. Any appreciable prolongation of such lactation period indicates stunted growth of the nursing young. Lack of space for animals in the laboratory did not permit the continuation of all groups for successive generations.

[3] All animals of the first generation received Squibb's vitamin B_{12} concentrate for parenteral use (Rubramin). All animals of the second, third, and fourth generations received Merck's crystalline vitamin B_{12}.

RESULTS

First Generation

The results of this study are submitted in Table 1.

Control Ration—50 Per Cent Soybean Flour. On the control diet without vitamin B_{12} and folic acid, during a reproduction period of 108 days, out of 42 young given to rear, 18 were reared; this meant a lactation efficiency of 42.9 per cent. On this diet, one female died on the 160th day of the experiment with no apparent external symptoms. The percentage of stillborn was 16.5 per cent.

Control Ration Plus Vitamin B_{12}. In contrast to the above, during a similar reproduction period, on the ration supplemented daily with 0.5 mcg. vitamin B_{12}, out of 59 young given to rear, 47 were weaned, (a lactation efficiency of 79.7 per cent). Furthermore, the length of the lactation period was reduced from 29 to 24.7 days. Three of the mothers on the 50 per cent soybean flour ration supplemented with vitamin B_{12} successfully weaned their litters in the unusually short period of 18 days. The influence of vitamin B_{12} on reproduction was evident from the fact that there were only 4 sterilities during the 110-day reproduction period instead of 6 during the like 108-day period on the diet unsupplemented with vitamin B_{12}; also, the stillbirths were reduced from 16.5 to 6.4 per cent.

There was no indication of a favorable influence of vitamin B_{12} on growth of animals which received the basal 50 per cent soybean flour ration in the first generation, probably because of storage of this vitamin from our stock colony diet.

Fifty Per Cent Soybean Flour Plus Folic Acid and/or Vitamin B_{12}. The 50 per cent soybean flour diet supplemented with folic acid had a pronounced effect on fecundity. During a reproduction period of 195 days, there were no sterilities and 15 females

TABLE 1

Influence on reproduction and lactation of proteins in soybean flour supplemented with vitamin B_{12}, in the presence and absence of folic acid (first generation)

TYPE OF RATION	LITTERS	REPRODUCTION PERIOD	YOUNG BORN		STERILITIES	NUMBER OF YOUNG GIVEN TO REAR	YOUNG REARED		WEANING TIME
			Alive	Dead			Number	Per cent	
		days							*days*
50 per cent soybean flour	9	108	81	16	6	42	18	42.9	29.0
50 per cent soybean flour* + folic acid	27	195	246	14	0	152	39	25.6	24.0
50 per cent soybean flour* + vitamin B_{12}	10	110	87	6	4	59	47	79.7	24.7
50 per cent soybean flour* + vitamin B_{12}	22	190	162	11	3	100	80	80.0	24.0
50 per cent soybean flour* + vitamin B_{12} and folic acid	26	195	257	10	1	144	128	88.8	21.6
60 per cent soybean flour	5	104	0	39	10				
60 per cent soybean flour + folic acid	8	182	44	17	8	37	0		
60 per cent soybean flour + vitamin B_{12}	11	183	123	0	7	66	40	60.6	24.3
60 per cent soybean flour + folic acid and vitamin B_{12}	21	178	172	22	1	112	80	71.4	23.7

* Control ration.

gave birth to 27 litters of 260 young. There were only 5.4 per cent stillbirths. However, in the absence of vitamin B_{12}, the percentage of young weaned was only 25.6. The absence of vitamin B_{12} had the following injurious effect on females in this group. One female died during parturition of the second litter, one died on the 194th day of the experiment, and another developed hemorrhages on the 120th day of the experiment and during the following 5 days lost 79 gm. weight.

In contrast, on the same ration supplemented daily with 0.5 mcg. vitamin B_{12}, in the absence of folic acid, during a similar reproduction period of 190 days, there were 3 sterilities and 6.4 per cent stillbirths. However, the lactation efficiency was 80 per cent.

The supplementation with both vitamin B_{12} and folic acid to the basal diet produced no appreciable further improvement in reproduction but a slight improvement in lactation efficiency.

Sixty Per Cent Soybean Flour. According to Hartman, Dryden, and Cary (6), the feeding of high levels of protein in B_{12}-deficient rations is deleterious and may even be fatal. From Table 1 it is evident that raising the soybean flour content from 50 to 60 per cent, which increased the protein content from 25 to 30 per cent, unsupplemented with vitamin B_{12} or folic acid, resulted in 100 per cent failure in reproduction. On the higher level of 60 per cent soybean flour, there was no favorable effect of folic acid on reproduction, in the absence of vitamin B_{12}. However, vitamin B_{12} in the absence of folic acid exerted a pronounced favorable effect on both reproduction and lactation. The addition of vitamin B_{12} was accompanied by an increase in the number of litters, twice the number of young, reduction of stillbirths from 28 per cent to 0, and an increase in the lactation efficiency from 0 to 60.6 per cent. The addition of folic acid, in the presence of vitamin B_{12}, had a pronounced beneficial effect on reproduction and an appreciable favorable influence on lactation.

Thirty Per Cent Soybean Flour. After the completion of the experiments on 50 and 60 per cent soybean flour, it was thought of interest to investigate whether a reduction to 30 per cent soybean flour, introducing 15 per cent proteins in the rations, would be adequate as a source of proteins for reproduction and lactation when supplemented with vitamin B_{12} in the presence of folic acid. The results are as follows: During a reproduction period of 80 days, 10 out of 15 females had 10 litters of 95 young; and, out of 59 given to rear, 53 were weaned in 21.2 days (a lactation efficiency of 89.8 per cent).

Second Generation

Fifty Per Cent Soybean Flour. Reproduction and lactation were complete failures in the second generation on the basal 50 per cent soybean flour ration unsupplemented with vitamin B_{12} and folic acid. During a reproduction period of 146 days, 8 out of 10 females were sterile. Two females gave birth to 2 litters of 15 young which died during the first few days of lactation.

Fifty Per Cent Soybean Flour Plus Folic Acid. The addition of folic acid, even in the absence of vitamin B_{12}, had a significantly favorable influence on reproduction and lactation. During a reproduction period of 158 days, 4 females out of 7 gave birth to 5 litters of 37 young; and, out of 24 young given to rear, 10 were weaned (a lactation efficiency of 41.7 per cent).

Fifty Per Cent Soybean Flour Plus Vitamin B_{12}. The addition of vitamin B_{12}, even in the absence of folic acid, had a further beneficial effect on reproduction and lactation. During the same reproduction period as on the diet supplemented with folic acid only, 7 females out of 10 gave birth to 93 young and the lactation efficiency was 72.2 per cent.

In the second generation on this diet, supplemented daily with 0.1 mcg. vitamin B_{12}, a 100 per cent increase in growth was produced in the males during an 8-week period, and about a 50 per cent increase in the females. This effect on the males is illustrated in Figure 1; the animal on the left, which received a ration supplemented with vitamin B_{12}, weighed 248 gm., while the one of the right, which did not receive the supplement, weighed 140 gm.

FIG. 1. *Influence of vitamin B_{12} on growth of second generation animals. The mother of the rat on the left received 0.1 to 0.5 mcg. vitamin B_{12} daily. During post-lactation period of eight weeks, the offspring (shown here) received 0.1 mcg. B_{12} daily. The mother of the animal on the right received the same ration without B_{12}. During post-lactation period, the offspring received no B_{12}.*

Sixty Per Cent Soybean Flour Plus Vitamin B_{12}. While this ration, even in the presence of folic acid, was poor for reproduction and a complete failure in lactation in the first generation, when supplemented with vitamin B_{12} in the absence of folic acid, an excellent lactation record was obtained in the second generation. During a reproduction period of 158 days, 7 females out of 10 gave birth to 74 young, and 41 out of 42 young given to rear were weaned in 23 days.

Third Generation

Only the group of animals on the ration containing 50 per cent soybean flour supplemented with vita-

min B_{12} was carried on for the third generation. Out of 14 females, 8 during a reproduction period of 60 days gave birth to 64 young. Out of 48 given to rear, 38 were weaned in a short lactation period of only 20 days.

Fourth Generation

On the 50 per cent soybean flour ration supplemented with vitamin B_{12}, 24 fourth generation animals made excellent growth.

SUMMARY

A diet, the proteins of which were furnished by 50 per cent low-fat soybean flour, introducing 25 per cent proteins in the ration and satisfactory in all dietary essentials for good growth of the Wistar strain albino rat, was only partially successful for reproduction and lactation in the first generation. In the second generation, this diet was a marked failure for reproduction and a complete failure for lactation. The supplementation of this basal diet with folic acid resulted in a remarkable improvement in reproduction, but lactation efficiency was only 25 per cent. The addition of vitamin B_{12} in minute amounts produced a marked increase in lactation efficiency which was 80 per cent. Vitamin B_{12} also had a favorable effect on reproduction. The addition of both vitamin B_{12} and folic acid produced the optimum results in both reproduction and lactation of first generation animals. Second and third generation animals were successfully reared on this ration supplemented with B_{12} only. Fourth generation animals grew well on this diet.

Excellent results in lactation have been obtained through the second generation with a diet, the proteins of which have been derived from 60 per cent soybean flour, supplemented with vitamin B_{12}. This ration unsupplemented with vitamin B_{12} proved a complete failure for reproduction and lactation.

Reducing the soybean flour to 30 per cent in the ration, introducing 15 per cent proteins, when supplemented with vitamin B_{12} and folic acid, still permitted marked success in reproduction and lactation.

Vitamin B_{12} exerted a pronounced influence on growth on the basal 50 per cent soybean flour ration during the post-lactation period in second generation animals.

REFERENCES

(1) Emerson, G. A., Wurtz, E., and Zanetti, M. E.: Vitamin B_{12}—a growth factor for young rats. Federation Proc. 8: 381, 1949.

(2) Sica, A. J., Allegeier, A. M., and Cerecedo, L. R.: The effects of pteroylglutamic acid and of xanthopterin on reproduction and lactation in the rat. Arch. Biochem. 18: 119, 1948.

(3) Maruyama, G. M., and Phillips, P. H.: Reproduction and lactation studies with rats fed natural and purified rations. J. Nutrition 36: 613, 1948.

(4) Sure, B.: Dietary factor essential for lactation. J. Nutrition 22: 499, 1941.

(5) Burkholder, P. R.: Vitamins in edible soybeans. Science 98: 188, 1943.

(6) Hartman, A. M., Dryden, L. P., and Cary, C. A.: The role and sources of vitamin B_{12}. J. Am. Dietet. A. 25: 929, 1949.

(7) Hall, B. E., Krusen, F. H., and Woltman, H. W.: Vitamin B_{12} and co-ordination exercises for combined degeneration of the spinal cord in pernicious anemia. J. A. M. A. 141: 257, 1949.

(8) Spies, T. D., Lopez, G. G., Milanes, F., Toca, R. L., and Aramburu, T.: A note on oral versus parenteral administration of vitamin B_{12}. South. M. J. 42: 528, 1949.

(9) Wolf, D. E., Wood, T. R., Valiant, J., and Folkers, K.: Vitamin B_{12} and the intrinsic factor. Proc. Soc. Exper. Biol. & Med. 73: 15, 1950.

(10) Barki, V. H., Derse, P. H., Collins, R. A., Hart, E. B., and Elvehjem, C. A.: The influence of coprophagy on the biotin and folic acid requirements of the rat. J. Nutrition 37: 443, 1949.

(11) Asenjo, C. F.: Pteroylglutamic acid requirement of the rat and a characteristic lesion observed in the spleen of the deficient animal. J. Nutrition 36: 601, 1948.

Grading of Dried Apricots

Important varieties of apricots grown for drying are the Blenheim and Tiltons, but Moorparks, which are largest and more costly, are grown almost exclusively for drying. Apricots for drying are not picked until fully ripe. Then they are cut in halves, pitted, and placed in drying trays, cup side up. These trays are stacked and wheeled into a sulphur house where the fruit is exposed to sulphur fumes for about 4 to 5 hr. After sulphuring the trays are spread out in the sun from one to seven days, depending on the weather. Sometimes the drying is completed in the sun, sometimes in the shade. As the fruit dries, the orange color becomes intensified and the fruit becomes semi-translucent. Six to 8 lb. fresh apricots are required for 1 lb. dried fruit.

Dried apricots are graded and stored and packed only as demands diminish the supply. The fruit is thoroughly washed, resulphured, sorted, and inspected before packaging.

Dried apricots are graded according to size as follows:

Extra Fancy: $1\frac{1}{4}$ to $1\frac{3}{8}$ in. in diameter
Fancy: $1\frac{1}{8}$ to $1\frac{1}{4}$ in. in diameter
Extra Choice: 1 to $1\frac{1}{8}$ in. in diameter
Choice: $\frac{13}{16}$ to 1 in. in diameter

The variance in each grade depends on growing conditions and may vary with each crop year.—*Ilma Lucas Dolan, Dietitian, California Dried Fruit Research Institute, San Francisco.*

Maturity—The Key to Managerial Efficiency[1]

JEROME A. GOTTSCHALK

President, Counselors, Inc., Chicago

THAT human relations are a vital part of the industrial picture is a cliché which has been much over-verbalized. We have talked back and forth and around and about the treatment and interrelationships of people in business until the words are almost meaningless.

About fifteen years ago, I became interested in the scientific study of executive ability. I do not hesitate to say that I have been completely frustrated in not being able to develop any scientific measurements for myself or to uncover in the literature any work which could be classified as truly scientific.

Kornhauser & Kingsbury focused my conclusions for me, when they said: "The functions of an executive are dictated by the social and economic setting in which his services are utilized. No clear picture of executive talent can be developed without constant reference to the setting in which these talents are displayed."

FACING REALITY

However, one thing of which I was very conscious in my early studies was that many successful men are not psychologically adjusted, in that much of their motivation—the driving force, the skyrocket on their back—actually is a result of their compensation for frustrations. I was struck, however, by the fact that the best of the men I studied were mature. My attention then turned to maturity. Maturity is sanity, and sanity is living in the real world—recognizing and accepting the realities, both the ugly realities within ourselves and the realities of the environment which have built our frustrations.

There is another concept of maturity which is basically an outgrowth of the "sense of reality," and that is, that maturity exists when man's power to control his basic impulses and desires grows with those impulses and desires. One test of maturity is the competence with which an individual utilizes his powers over his environment in relation to his awareness of results of his activities. The task of all living things is growth. *The task of man is balanced growth*—to repeat, TO GROW IN THE POWERS which control the other elements of our personality which are constantly growing.

Psychologic adjustment is too often considered a great achievement. However, Watson, the behaviorist, once said that the only truly adjusted man is a dead one. As I have said, the power that drives most of our top administrators and executives stems from frustration for which they are compensating. The mature compensator recognizes that his or her activities *are* compensations and directs them into positive channels of giving better food service, selling more gas stoves, building better automobiles, or running better advertising campaigns, instead of engraving the Lord's Prayer on the head of a pin or sitting crumpled up in the corner of a hospital ward. Much of mature behavior is simply the result of a recognition and acceptance of the realities of our unadjustment.

The big problem is: what is reality? Is the reality of the priest in his concept of God a different reality from the concept of the Communist about Stalin? Is reality different for the physical scientist whose nose is poking around in the middle of molecules from that of the president of a major appliance company whose interest is in production and sales of goods and services, or from that of the dietitian in the hospital? Is there any universal reality? These questions I do not intend to answer. In fact, I couldn't. For my purposes, however, I would like to consider reality as the way of life in which all of us are operating at the present moment.

In this reality we have some 62,500,000 persons gainfully employed in these United States. Their relationships to each other in the everyday process of earning a living are the human relationships which are so vital. No group can be more mature than its leader, whether the group be a small food department or a large corporation. Maturity requires a recognition of limitations imposed upon others and self. It requires a recognition and reconciliation of people with different levels of ability, different levels of motivation, different beliefs and attitudes, and different bases of reality. The mature dietetic administrator, like the business executive, does the best she can with the best organization available. She coordinates what she has and doesn't fret because "my

[1] Presented at the 33rd Annual Meeting of The American Dietetic Association in Washington on October 19, 1950.

people are not worth a plugged nickel." She operates within the framework of her real organization and personnel.

What *are* some of the characteristics necessary for maturity? A look in the mirror will tell you whether this discussion applies or not.

To repeat, I am convinced that the earmark of a successful person in any organization—and the key to sound working relations—is maturity. Persons who have this sense of reality and maturity exhibit certain patterns of behavior or characteristics which I would like to discuss with you. They are:

(a) Ability and willingness to make up one's mind.
(b) Acceptance of the responsibilities, obligations, and consequences of one's acts.
(c) Objectivity about self and work.
(d) Compromising with life.
(e) Refusal to close the mind permanently on any subject.
(f) Acceptance and recognition of the indifference of the world to one's fate.
(g) Capacity for tension.

ABILITY AND WILLINGNESS TO MAKE UP ONE'S MIND

This is characterized by the ability to decide and act, or to decide and not act, but decision is required. Should we buy onions or steel or not buy onions or steel? This factor includes the ability to reach a decision and to act on evidence which is available now, rather than "hem and haw," "wait and see," and "hold off to see what the market's going to do," *and* having decided, ACT. The mature administrator uses her staff people and colleagues to obtain facts, but *she makes her own decisions*. Some of you may be familiar with, although I hope you aren't, the type of person who, when in a position where she should make the decision, says, "You people decide what to do about it."

ACCEPTANCE OF THE RESPONSIBILITIES, OBLIGATIONS, AND CONSEQUENCES OF ONE'S ACTS

Such a person says, when the results of the decision she refused to make turns out to be wrong and thus puts the rest into a position which makes her "right": "At the time I let you people make your own decision on this I actually was never in favor of it." The person who says, "This is my responsibility. I've made the decision and I am stuck with it, good, bad, or indifferent" is mature and is respected.

The executive or administrator who constantly makes promises to people she wants in her organization and then doesn't live up to them, may or may not be mature. If, as in the case of one man I know, he believes his reasons for "blowing hot and cold" are justifiable in each case, then maturity is lacking. This particular man's star is dimming at a time when it should become brilliant. In the case of another man whose behavior, to an outside observer, is identical, there is considerable maturity because he knows what he is doing and is willing to take the criticisms levelled at him. He may not be considered the nicest person, but he runs an effective organization.

OBJECTIVITY ABOUT SELF AND WORK

The word "objective" has been bandied about quite a bit. I know a psychiatrist who humorously defines it as "the way I look at it." I think my mother gave me the best definition of objectivity one time when I was being disturbed by some of her grandchildren while trying to study. She said, "Jerome, pay no attention to them. They're just little objects." In other words, being objective is being able to look at things as they really are without emotional involvement or prejudice. A person who is objective about herself knows what she wants, what may result, and why. She has a clear understanding of what her values are whether God, money, success, domination, or submission. She knows which things are most important to her and she *accepts* the fact that she must act according to these values. If a man wants to be a priest, he will sacrifice home life and the companionship of a woman; if he wants to be a missionary, he will sacrifice home ties and the comforts of civilization; if he wants to be a tycoon, he will sacrifice much of his home life and the comforts of soft living. Each will sacrifice the things he or she must and will *accept* the sacrifice.

The most mature example I have ever known of this sense of values and of reality occurred when Jesus said, "Weep not for Me, but for your children." He knew what He wanted. He was paying the price, and yet He could think objectively in terms of the future. It is characteristic of non-successful people that they have a desire to be someone else at some other place and to be doing something else. We should all take a good look in the mirror and find out how objective we are.

COMPROMISING WITH LIFE

No one has ever attained all he has wanted. No man has a wife who is everything he wants in a wife. No administrator or executive has become as successful as he or she has wished; no scientist has discovered all of the things he has wanted to know. But most of us wouldn't change what we have. The mature administrator, the mature executive, is able to recognize what it is she has, what it is she has not, and is willing to *accept* her level of achievement as the best she can do, if she has given it all she has. I know a man who is fairly successful—he earns about $12,000 a year—but has changed jobs five times in the past eight years. He has always wanted to be a professor, and he has the ability, but his standard remark is "you can't make any money teaching." He is an unhappy man, who will not accept the compromise he must make.

REFUSAL TO CLOSE YOUR MIND PERMANENTLY ON ANY SUBJECT

There are two types of smart alecks: one, the person who thinks she knows it all—and she very often provides humor for more realistic persons; two, the one who knows she doesn't know it all, but is convinced that anything she doesn't know, isn't worth knowing.

Men and women with prejudices are people who have closed their minds. A number of years ago, I wrote a series of articles on personnel which had to be reviewed by a committee before publication. As an example of prejudice, I used a colleague who was an outstanding personnel consultant. He was unable to evaluate properly any man who had a mustache. I indicated that his knowledge of this prejudice permitted him to take steps to see to it that persons who did have mustaches were given fair treatment in his business. My copy came back with this illustration scratched out and the comment, "not a good example." It was initialed by a man *who wore a bushy mustache*. I don't think I need to go into the complexities of this situation. As a negative factor in our business operations, we can recognize the person who says, "We've done it this way for years; why change now?"

INDIFFERENCE OF THE WORLD TO ONE'S FATE

If I were to suffer a heart attack the day a paper is to be presented before a group, there would be three possibilities. It might happen *before* the meeting, *at* the meeting, or *afterwards*. If it occurred *before* the meeting, the program chairman would be unhappy because the program would be upset. If it happened *after* the meeting, only the editor who would want to publish it would care. If it happened *during* the meeting, those attending would actually dislike me because they would be embarrassed—or inconvenienced by having to take care of me. As a group they would be interested in me only for what I can produce for them.

Your organization, your patients, and customers are concerned with you only as long as you are a producer or a potential producer. It is not the objective of a business organization to create welfare. It is the business of business to create utilities. When you or I contribute to the creation of such utilities we have value. But I know of no organization that can shed tears because of the loss of an employee. When you contribute to the creation of utilities and services, you contribute to the creation of surplus which then can be used for welfare. When management, in a sense of sentiment, carries dead weight in positions of responsibility, it is not only being indifferent but also unfair to those who produce and to those who ultimately may benefit by surplus. The mature executive recognizes his true worth and the true worth of others to an organization—and he recognizes the seeming indifference that he must show or be shown as he or others become non-productive.

CAPACITY FOR TENSION

This is basically the ability to "sweat it out," as the boys in the foxholes termed it. It is the ability to act now or not act now, after the evidence has been weighed. The divorce rate in Hollywood seems to indicate that tension capacity is at a low ebb. You have all had experience, I'm sure, with the "boss" who is always waving her arms and acting when she shouldn't be acting and sitting with her head in her hands when she should be doing something. Many people "go to pieces" under pressure. The ability to control activity—to withhold a response until the course of action to be taken is clear—the ability to react properly, at the proper time, without mental confusion is one of the best clues to maturity. It is the maximum use of the intellect in relation to the will.

It may be felt that there is a general overlapping of these characteristics. That is true. I have merely attempted to define and clarify the concept of maturity. None of these characteristics stands alone as a criterion. It is a combination of them in various amounts which results in a degree of maturity. Spend some time thinking about these characteristics—apply them every day.

Dietary Guide to Aid Public Health and Social Workers

The Massachusetts Dietetic Association has recently released a *Guide for Planning Normal and Therapeutic Diets*, which was prepared for the use of public health and social workers in interpreting therapeutic diets to patients and clients. The committee, headed by Elizabeth Caso, was composed of dietitians from eleven different hospitals and agencies in the state.

The normal diet plus eleven therapeutic diets, including the new method of calculating diabetic diets, are presented. For each diet an understandable explanation of its use and its variation from the normal is given, as well as foods allowed, amounts, description of the foods, and a sample meal plan for one day, including between-meal suggestions when advisable.

At the back of the book are a number of tables of general information, such as "Common Sources of Food Constituents," "Recommended Dietary Allowances," "Weekly Food Lists for Special Diets," and "Tips for Economical Buying."

The Guide may be purchased from the Massachusetts Dietetic Association, 221 Longwood Avenue, Boston. The price per copy is $1.

Procedures in Purchasing Canned Foods[1]

ROBERT C. PROFFITT

Manager of Foods Stores and Foods Buyer, Pennsylvania State College, State College

IN THIS discussion, the intent will be to discuss buying arrangements which will lend themselves to the various situations dietitians are required to consider in carrying out their purchasing duties. To enable you to evaluate the methods to be discussed and to try them, I should like to review those factors which contribute to the cost of canned food supplies from the point of growth of the food products to ultimate storage in your feeding units. It may be possible in this way for you to eliminate the need for several of the services now used—at a consequent saving in purchase price.

Food buyers for hotels, hospitals, restaurants, and institutions are usually limited in their ability to purchase to advantage by small storage areas. As a consequence, it is necessary to add the cost of operation of one of the various types of wholesale food distributors to the purchase price of the merchandise in order to secure the luxury of weekly purchase and delivery.

Let us examine the operations of the packer, the shipper, and the various types of distributors, and in so doing chart the cost factors in each instance as they apply to a single can of food, using as our example a #10 tin of choice quality yellow cling peaches.

THE PACKER

The first agency we are concerned with is the packer. In this instance, his cannery is probably located on the West Coast. This year peaches for canning were purchased at $60 per ton. Assuming the crop was harvested correctly and received and processed efficiently, the quantity of peaches required to fill a #10 tin cost approximately 15 cents. In addition to the approximated 15 cents for fruit, the packer was required to spend 9 cents for each tin container, 0.35 cents for each label, and 12 cents for a cardboard case in which to ship six such cans of peaches.

Fruit, tin, label, and proportionate cost of a case as applied to our #10 tin, therefore, amounted to approximately 26 cents.

Buyers who purchase directly from cannery stocks are paying approximately 72 to 82 cents per can for canned peaches processed under these cost conditions. The difference between the selling price and this 26 cents represents a return on the packers' investment in a cannery; sugar sirup; cannery wages; field inspectors; laboratory expense needed for quality control; and sales, advertising, and promotional cost.

Operation of a cannery is a hazardous business due to the many variables involved. Growing conditions will cause a variation in the yield of acreage contracted for by the packer, and availability of supplies thus will vary from year to year. A packer who is successful in selling his season's supply early begins the next season at a price disadvantage, for those not so successful are selling at lower prices. They are more willing to sacrifice their margin of profit to liquidate their investment at the earliest possible date. The quality of the yield of certain acreage within the growing area will also vary, and a packer may be faced with a shortage of the grade demanded by his customers.

CONTRACT BUYING DIRECT FROM THE PACKER

The selling methods of the packer are the next factor for food buyers to consider. It is at this point that we will consider "contract buying negotiation." Since many dietitians have the ability and do purchase at this level, or buy through agencies which perform this buying service for them, we must examine these procedures carefully.

The packing industry is engaged in a business which requires quick sale of large quantities of supply at a low sales and warehousing cost. Throughout the years, packers have developed standard selling methods to insure prompt movement of large quantities of supplies, during or soon after the packing season is completed. Few packers have warehouse accommodations to store a full season's pack, plus a possible carry-over of supplies from the preceding year.

There are exceptions, such as the H. J. Heinz

[1] Presented at the 33rd Annual Meeting of The American Dietetic Association in Washington, D. C., on October 17, 1950.

Company, which undertakes to pack, distribute to its local warehouses, sell, and deliver to each customer through the services of a large sales, warehouse, and trucking force. Most canning companies, however, employ a *few* salesmen to sell to direct purchasing companies, and then use the warehousing facilities and sales force of these distributors to complete the movement of their supplies to the retail outlets.

Conditions of sale vary little from year to year; however, the incentives in allowances for early shipment do vary, commensurate with the size of the pack and the industry carry-over of supplies.

FAOP AND SAP CONTRACTS

If a critical supply situation is evident before the packing season commences, sellers offer their supplies on a FAOP (firm at opening price) contract. This means that the buyer signs an unpriced contract and agrees to take his supplies at the price named by the packer when the pack is under way or completed. Due to the Korean development, hundreds of thousands of cases of canned goods were purchased from last summer's pack on that basis during July and August.

In a normal situation, the first contracts usually offered are SAP (subject approval of price) contracts, which are forwarded as soon as the packer can get a reasonably accurate estimate of the crop yield. These contracts give the buyer an option to buy a specified quantity, subject to approval of price when named. They work to the advantage of the buyer, if short supply develops before the pack is completed, either due to adverse weather during the packing season or to an unexpected world crisis, such as the Korean situation. In such cases, supplies may be limited to a quantity sold on an SAP basis and only those customers having such contracts are given an opportunity to buy.

FUTURE CONTRACTS

In normal years, the second step in direct selling procedures is to obtain confirmation of the SAP contract and specific shipping instructions. This contract takes the form of a "future contract," meaning purchase of stocks at a guaranteed price, to be shipped at specified intervals (or sooner if needed) over a specified period, after the product has been packed and the cannery can make shipment. The packer agrees in the contract to guarantee that all goods delivered against the order will be billed at a price no higher than that named in the contract. He usually specifies, also, that at least one-third of the total sale is to be shipped as soon as available, with the remaining thirds to be shipped at sixty- to ninety-day intervals thereafter. Peaches packed in July would be shipped to arrive in August or September, December, and February.

If other reputable packers of the same item reduce their prices during the season, the packer will usually conform to the new price structure and will reimburse the buyer for the amount of the reduction on all goods ordered but unshipped, plus all supplies shipped during the thirty-day period prior to the reduction.

The packer will also guarantee supplies against unusual spoilage and will reimburse the buyer for those spoiled during a period no less than six months after arrival in the buyer's warehouse. If the buyer desires, he may take the option of deducting from his invoice $\frac{1}{4}$ to $\frac{1}{2}$ of 1 per cent as a "swell" allowance. In such cases, the packer accepts no responsibility except for unusual spoilage far in excess of the swell allowance. Those companies handling large quantities of supplies on a quick turnover basis usually deduct the swell allowance as the most expeditious method of handling the problem of spoilage.

SPOT PURCHASES

During years of abundant supplies of canned goods, buyers often pass up the opportunity to contract for future delivery of new packs and await an expected industry decline before ordering. Orders placed on this basis for supplies packed and ready for shipment are called "spot contracts" or "spot purchases."

If a buyer has an adequate supply of product at the moment but anticipates an increase in price of stocks being held by packers, he may place an order for future delivery (usually limited to thirty days from date of order) at the present market price.

Let us pause and review the advantages accrued through purchasing on a direct basis from the canner.

(a) We own our product at the lowest possible base price.

(b) We can purchase a season's supply under contract terms which guarantee the cost throughout the greater part of the year. If the market goes up or down, we are protected through the price guarantee provision of our contract.

SHIPPING COSTS

Those who have purchased supplies directly from the canner are now faced with the problem of arranging for shipment by the most economical means. Canned foods can be shipped by boat, rail, or truck, or by a combination of two or all three methods. To illustrate, let us apply the various rates to our #10 can of yellow cling peaches.

Shipment by water from the West Coast through the Panama Canal to Baltimore in a quantity equivalent to that required to meet minimum carload rates (36,000 lb., or approximately 750 cases) would cost $1.19 cwt. plus 3 per cent tax, or about 10 cents per can.

Shipment by rail across country, again in carload quantities (required minimum, 60,000 lb., or 1250 cases) would cost $1.74 cwt., plus 3 per cent tax, or

approximately 14 cents. Shipment by rail, West Coast to Washington, D. C., in LCL (less than carload quantities) would cost $6.21 cwt. and 3 per cent tax, or approximately 50 cents per can.

There are many variations of the above shipping methods, one being to ship your supplies in a stopover car, in which supplies from the cannery for two or more customers would be included in one carload. This car would be stopped at the rail siding of each customer and his supplies removed. The remaining cases would then be rearranged to prevent shifting and sliding in the empty space that is left and shipped to their final destination. The railroad would charge each customer the same rate of freight based on the rate of the one applying to the final destination of the car. A charge of $12.39 plus 3 per cent tax is made by the railroad company for each stopover made between the origin of the car and the final destination. This charge usually appears on the freight bill as a *pro rata* charge, based on the number of cases unloaded by each customer participating in the car. The total cost of stopping the car would be less than 2 cents per case, or $\frac{1}{3}$ cent per #10 can.

Your supplies may be shipped by truck at a reasonable rate, approximating that of the rail rate in carloads, if the hauling distance is not too great and you are located near well traveled truck routes. Trucking service can be used to advantage (a) for shipment of supplies from adjacent canneries, (b) for reshipment of supplies delivered by boat to the nearest seaport, or (c) for shipment of supplies from consolidating warehouses used by some packers when serving a heavily populated area.

In our area, Central Pennsylvania, we can have supplies shipped via truck from Baltimore, a distance of approximately 200 mi., for 39 cents per cwt. However, shipment via truck from Pittsburgh, about 140 mi., costs approximately twice as much because truckers do not enjoy a heavy volume of business over this route.

TRENDS IN DISTRIBUTION

Until recent years, it was customary to purchase straight rail cars for a shipment to a single customer. The smaller accounts were thus penalized because a carload of one item might last from eight to twelve months. As a consequence, the buyer was unprotected insofar as price declines were concerned, since his goods were generally outside the price guarantee period of thirty days. It also required a large investment in stock which would not be liquidated in less than the eight to twelve months required for resale. This type of selling was to the advantage of the packer in that he sold his product once a year with little sales or warehousing expense.

However, due to the tremendous expansion of chain store sales in the past decade, a number of general line wholesalers serving the independent retailer have gone out of business. Others have had to streamline their operations, reduce their margin of profit, and exercise greater efficiency throughout to permit retail grocers to meet to some extent the competition of supermarkets.

A PURCHASING POOL

Rapid turnover of supplies at reduced mark-up has become the policy of aggressive, general line wholesale distributors serving retail store outlets. As a consequence of this trend, the packer has had to adjust the mechanics of his operation to meet the demands of the wholesalers. This has resulted in several radical changes in the food distribution picture.

Packers are frequently required to build "pool" cars (that is, sell fifty to one hundred cases of several items, each to originate from the same cannery, for delivery to several customers), so that sufficient shipping weight is acquired to obtain for each customer, a carload rate for freight (plus stopover charges) on his portion of the goods shipped in the car.

You can see from our previous discussion of rates that the packer has no other alternative. Shipment of products in less than carload lots would price the goods equal to or higher than standard retail shelf prices.

Some packers have attempted to meet the buying desires of their customers by installing consolidating warehouses, from which a large variety of products may be shipped. When purchasing through such facilities, carload shipping rates can be obtained even when buying as little as fifty cases of each of a number of products.

Wholesale distributors specializing in sale of products to hotels, restaurants, institutions, and hospitals, have not felt as great pressure from their buyers as have those dealing with retail outlets; there has, therefore, been a natural reluctance to change long established procedures. However, in Central Pennsylvania a number of packers have established central warehouses from which buyers can purchase a variety of products in truckloads; or on a two-stopover truckload basis, they can purchase as little as 150 to 200 cases, without suffering a freight penalty. In all probability, other hospitals, restaurants, hotels, or institutions in your area would welcome an opportunity to pool their buying resources with you and assist in meeting the weight requirements to obtain the most advantageous buying prices.

Based on the current price structure of distributors in the Central Pennsylvania area, who are asking approximately $1.10 per can for choice quality yellow cling peaches, purchasing on a direct basis such as discussed above would provide a saving of approximately 25 cents per can. This means a free can for each four purchased.

THE WHOLESALER

If such direct buying arrangements do not lend themselves to your particular situation, you must turn to a distributor as your source of supply. A cooperative wholesaler who serves a group of independent retail stores is probably located somewhere in your vicinity. A common mark-up for this type of distributor is approximately 2 to 3 per cent with hauling charges from his warehouse to your building of approximately 1½ per cent. He will, in all probability, welcome an opportunity to purchase supplies for you, and by so doing, lessen his problems of purchasing in sufficient quantity to gain the lowest possible freight rate. A can of peaches bought on this basis would cost about 3 to 4 cents more than if you bought directly in straight carloads.

Some general-line wholesale distributors employ a similar selling arrangement and operate on a cost-plus basis in selling selected customers. These arrangements vary from a flat cost-plus percentage figure to one which operates on a sliding scale. In the latter case, the cost-plus figure is reduced in proportion to the volume of sales enjoyed. Those purchasing through either cost-plus, general-line wholesalers, or cooperatively operated wholesale distributors can often arrange to purchase supplies from the sales representative of the cannery who will in turn, add your order to that of the wholesaler. By so doing, you can insure accurate price information on which your cost-plus percentage is to be added.

WHOLESALERS IN THE INSTITUTIONAL FIELD

I have discussed the procedures of purchasing on a direct basis, either independently or by pooling your purchasing power with others in a similar situation in your area, as well as the purchase of supplies through a cooperative wholesale distributor, or on a cost-plus arrangement through a local, general-line wholesale distributor. I have omitted up to now any specific reference to wholesale distributors.

Throughout the years many fine companies have rendered a real service to those engaged in large-scale feeding operations, and many outstanding concerns are still engaged in this task. The cost of their operation is necessarily high due to the performance of the many services demanded of them. The profit in their operation is determined by their ability to purchase supplies with unusual skill. Their costs depend on their need for expensive warehousing of large quantities of a wide variety of products, which often must be sold and delivered in small lots on a weekly or semi-monthly schedule. You will recall that the cost of shipping a case of canned goods LCL (less than carload lots) was, in our example, 50 cents per can. If you require your distributor to gamble on your food needs and expect him to purchase supplies which you can order and have delivered as the need arises, he is entitled to a special mark-up.

If you can determine your needs once a year, just as he is required to do, if you can contract with him for delivery of supplies on the same schedule used by the packer in delivering to him, if you can eliminate weekly sales and delivery expense, if you can permit him to eliminate to some extent the gamble he must take each year in trying to estimate your purchases by item, you should be able to work out a special pricing arrangement. Wholesale distributors are in the business of selling food supplies. Their profit is derived through the process of buying and selling and not through the operation of a warehouse, trucking, and selling force. If you can streamline your purchasing procedures, almost any aggressive wholesaler will welcome an opportunity to enter into a special buying arrangement with you.

Lest You Have Forgotten

Although your ticket to the convention city this fall will read "Cleveland, Ohio," a hundred and fifty-five years ago, your destination might have been designated as Cleaveland in the Western Reserve, often called "New Connecticut."

In those days this western territory was the back yard of the Colony of Connecticut, obtained through a grant from Charles II of England. It was disputed land, however, portions of it being claimed by four other colonies because English kings were little concerned with boundary lines. Often one monarch bestowed territory that his predecessors had already given away.

Confusion was cleared a century later when the Thirteen States agreed to relinquish disputed lands to the federal government. Connecticut, which was required to waive a part of her claim, reserved a tract which later became Northeastern Ohio and which was known as the Western Reserve.

Very shortly thereafter, Connecticut compensated her citizens who had suffered losses by fire or otherwise during the Revolution and offered the remaining tract for sale. A group of citizens, who became organized as the Connecticut Land Company, bought the unsurveyed land at 40 cents an acre.

It was Moses Cleaveland, a shareholder and a member of the board of directors of the company, who became superintendent of the surveying party which set forth in 1796 to lay out townships and to survey lots suitable for sale. It was he who selected the site of the town, which was to be named for him, at the mouth of the Cuyahoga River.

The maker of the first map of the area inadvertently spelled Cleveland without an "a."

Detecting and Eliminating Hidden Costs in the Food Department[1]

FERN W. GLEISER

Professor, Institution Economics and Management, School of Business, University of Chicago

JUDICIOUS management of the food service operation means favorable financial results. Thus, costs are of vital concern to the food director for they indicate efficiency and control in the department.

Costs are usually split into fixed costs and variable costs. Fixed costs are concrete and easily discernible in any profit and loss statement. Examples of such costs are: rent, depreciation, and salaries. These costs are set and established in advance of the current year or accounting period.

Variable costs represent that portion of expenses which cause the "total cost" to fluctuate. They comprise expenditures for food, labor, utilities, and replacement of small equipment. True, variable costs change continually, but even these costs can be estimated with notable accuracy. With the use of figures for previous periods and a sensible and logical outlook to the future, variable costs, too, become fixed costs within certain limits. Even if variable costs do change and estimates appear to have been inaccurate, no real harm will result, since such costs vary concurrently with revenue.

HIDDEN COSTS

The problem of costs would, therefore, seem rather clear and easily controllable. At this point, however, there creeps into the picture the somewhat vague item called "hidden costs." Theoretically, there is no such thing as a hidden cost because if it is actually hidden, its existence is unknown, and, once found, it rightly cannot be called hidden. Actually, a hidden cost is simply an addition to a fixed or a variable cost which is due to managerial inefficiency.

Where should one look for these elusive costs? Every phase of the operation is subject to hidden costs which, if eliminated, result in smoother functioning of the department; lower food, labor, and operating costs; and thus a more desirable profit and loss statement.

Hidden costs may occur in relation to food. There is a possibility that these costs may be uncovered any place along the way from the buying to the service of the food. Thus, control should be exercised in all departments so that operations from the time food is purchased until it is served are protected from unnecessary rises in cost.

Hidden costs resulting from continued poor judgment in buying, food spoiling in storage, frequent over-production of food which creates leftovers, and a lack of standardized portions in the serving of food may result in a 45 per cent food cost which could be reduced to 40 per cent through constant vigilance and alert supervision.

Or, looking at it another way, it is predicted that the per capita civilian consumption of food this year will be about 2630.7 lb. This means 7.2 lb. food per person a day, or, on the basis of three meals a day, 2.4 lb. a meal. If an institution serves an average of 3000 meals a day, that means 7200 lb. or 3.6 tons of food coming into the storerooms and refrigerators, to the kitchen, and to the dining room each day. Suppose there are inefficiencies resulting in hidden losses in any phase of the food operation—from the food procurement to its service—which amount to 1 cent per pound of raw food. That would mean a loss of $72 a day or in a year of $26,280. A neat figure to add to the net profit!

Or, take the labor cost on the financial report which may appear as 32 per cent of sales dollar or income. Through diligent detection and study, can that percentage be reduced? Are there hidden costs in that percentage figure which have no place in a well organized and managed food department?

Or, again, are there personnel policies of the administration and food manager which cause a higher labor cost and are covered justly or unjustly in the payroll?

Operating costs, including maintenance, replacement, heat, light, laundry, and other items that seem small individually are important sources of hidden costs.

[1] Presented at the 33rd Annual Meeting of The American Dietetic Association in Washington, D. C., on October 17, 1950.

The layout of the kitchen which requires workers to take three times as many steps as necessary might be reviewed with relocation, for example, of the pot washing department. The hidden cost is like sand passing through a sieve, always disappearing and never checked.

On examination of some practical instances of hidden costs, it will be evident that all activities in every institution could be subject to scrutiny.

In detecting losses in food cost, some managers might well check on the delivery of supplies. A produce man who sells to hotels, restaurants, and hospitals in one large city stated recently that not more than 5 per cent of his customers check the fruits and vegetables his company delivers. He also related instances of short count or weight that some dealers practice, such as removing two or three heads of lettuce or cauliflower from a crate and then repacking it, or delivering a smaller size orange than marked on the box.

EMPLOYEES' ERRORS

In the bakery department of a large cafeteria, the directions for a recipe stated "scale cake batter 20 oz. to the cake tin," which was 9 in. in diameter, $1\frac{1}{2}$ in. deep. The baker was very proud of her cakes. Thinking that if the chocolate and Lady Baltimore cakes were a little higher, they would look better, she decided to scale her cakes 23 oz. to the tin. What did this mean in terms of diminishing returns? Twenty, two-layer cakes, or 40 tins, were made each day. Thus, for 40 tins of cake, 3 oz. over the standardized directions meant 120 oz. These 120 oz. would make 6 more tins of cake or 3 cakes. These 3 cakes, cut 18 slices to the cake, meant a loss of 48 servings. At a selling price of 12 cents per slice, there was, thus, a loss in income of $5.76 on cake for one day. Multiply this by seven, since cake is on this cafeteria counter every day of the week; the loss was $40.32 per week or $2,096.64 a year.

In one of the big universities, the food cost each month in one men's hall ran consistently 2 per cent higher than in two other men's dining halls. The explanation made was that there were so many athletes in this hall that they consumed more food per man. The administrative dietitian decided there must be another reason and began her job as detective. The cause proved to be the one pointed out most frequently as an error of cooks. The meat was being roasted at 500°F., instead of at the standard 300°F. This, coupled with larger than standard portions, was the offender. When rectified, the food cost for this dining hall was brought into line with the other men's dining rooms.

One cost which is receiving more attention than formerly is employee meals. Costs for employee meals have usually been estimated at 4 per cent of total food costs. Actual findings, however, have uncovered that they may be 8, 9, or even 10 per cent. When it can be arranged, the charging of employees for meals at a 25 per cent discount under that charged paying guests or customers is a recommended policy. Changes in income tax reporting of meals have been another factor in changing policies regarding employee meals.

LABOR COST

An institution whose labor cost was strikingly higher than surrounding food service organizations made a detailed analysis of labor hours. The procedure for the study included recording the time each worker arrived for work, the time work was begun and stopped, time meals were eaten, and time each worker left in the evening. During the days of the study, a complete circuit of all the working spaces within the operation was made every 15 min., from the time the first employee arrived until the last one left. The circuit was begun at the same place each time and the same route was followed. During each tour, each employee was observed and a notation was made as to what he was doing.

To complete the labor picture, after obtaining data for the days of the study, information regarding the activities of all employees was discussed with the supervisor. Tabulation was made of: (a) hours scheduled for all employees, (b) hours worked but not scheduled, and (c) hours scheduled but not worked.

The results of the study revealed there was a daily average of $456\frac{1}{4}$ labor hr. scheduled, $8\frac{3}{4}$ hr. worked but not scheduled, and 46 hr. scheduled but not worked. There was thus the difference between 46 hr. minus $8\frac{3}{4}$ hr., or $37\frac{1}{4}$ hr., for which employees were paid but did not work. Percentage-wise, 8.2 per cent of the hours scheduled netted no return to the institution. In this case, the average wage rate was 85 cents per hour; thus, $37\frac{1}{4}$ hr. lost in labor expenditures per day amounted to $31.66. If there were the same average loss each day, the loss would be $11,555.90 in a year.

The blame for such a loss from wasted labor may not be placed entirely on the employees. It may be from one or more causes, such as:

(a) Lack of sufficient tools and equipment.

(b) Broken tools and equipment remaining unrepaired.

(c) Lack of sufficient supervision and planning.

(d) Poor scheduling of employees' hours of work, so that more employees are on duty than need to be when the work load is slack.

(e) Failure of the menu planner to provide fair distribution of work among employees.

DETECTING HIDDEN COSTS

Only a few of many examples of hidden costs have been cited. At this point two questions well can be asked: how does one detect these losses, and how can one eliminate hidden costs?

Budgets, records, and cost control systems have not been discussed. The importance of these, however, cannot be overemphasized, although they in themselves will not remove hidden costs. They are useful tools for the detection of losses and for determining the effectiveness of management. For example, a total food budget which is divided into portions designating a certain percentage expenditure for (a) meats, poultry, fish, (b) dairy products, (c) fruits and vegetables, (d) bread and cereals, and (e) groceries is popularly used. Many institutions divide it into seven to ten or more categories, depending on the use to be made of the information.

Another example of the value of a budget is that for personnel. It can allocate labor hours and costs to: supervision, food processing and preparation, service, and cleaning and maintenance. These figures can serve as a guide for spotting areas where hours, as reflected in payroll cost, seem out of proportion when compared with periods when the labor cost figure was favorable.

ELIMINATING HIDDEN COSTS

A comparison of all costs for a given period with those for previous periods and with the budget are initial approaches to the task of uncovering hidden costs. While "facts and figures" are essential tools in determining the need to find hidden losses, the answer to the question of how to eliminate hidden costs, once found, becomes a feature of management policy or decision. Constant supervision of all activities in the department and an awareness of the possibility of leaks at every turn in the operation is a recognized necessity.

The trend in the organization of food departments is to provide continuous alert supervision as a means of reducing hidden costs.

A plan used successfully in a commercial cafeteria could be used in other types of food operations. It is that the food supervisor in charge of the salad department, for example, not only plans the production of the salads but also acts as the supervisor of the counter. Thus she actually sees the reactions of customers to the salads and can estimate more exactly the kind and number of salads which will be sold in a given period, thereby avoiding overproduction. The same applies in all the other food production departments.

An adaptation of this same idea is taking place in some hospital dietary departments. The food for the patient is the responsibility of the dietary department from its preparation to its arrival at the patient's bedside—not just to the floor where another department takes over the serving.

This discussion has presented only a few ideas on eliminating hidden costs. It is to the manager's advantage to look for and remove them. However, the food manager cannot do the job alone. The aid of each and every employee must be enlisted. Efforts exerted by all will reach into every department and will eliminate hidden costs and achieve a more efficient functioning institution.

BIOGRAPHICAL NOTES FROM THE HISTORY OF NUTRITION

Claude Bernard—July 12, 1813–February 10, 1878

Until about 1850, digestion was considered to be a gastric function, and it was generally believed that the animal body could not build any compounds within itself, that it could only break down compounds taken as food. Claude Bernard's research entirely changed this viewpoint.

Claude Bernard was born on July 12, 1813, the son of a vine grower at Saint Julien in the Rhone Valley in France. At an early age, Bernard was apprenticed to a pharmacist; however, his interest lay in literature, and at the age of twenty-one, he went to Paris with the manuscript of a play. M. Gerardin, Professor of Literature at the Sorbonne, advised him to study medicine so that he might be assured of an income. He acted on this advice and became pupil assistant to Magerdie.

His technical skill, keen mind, and insight into experimental studies led him into experimental physiology. His three greatest contributions were probably the discovery of the glycogenic function of the liver, the study of the pancreatic secretions, and the vasomotor system. Bernard discovered the presence of sugar in the hepatic vein of the dog no matter whether the animal was fed sugar or starch or was starved. By carefully planned experiments, he demonstrated that sugar was formed in the liver, and in 1857 he isolated glycogen. A chance observation on rabbits' urine led him to study pancreatic juice and to discover that it acted on carbohydrate, protein, and fats. Bernard's published papers filled seventeen volumes, and he received many honors. He was not only one of the greatest of all experimental physiologists, but he also laid the foundation of modern experimental medicine.

His family life was unhappy, but he was described by Sir Michael Foster as "tall in stature, with a fine presence, and a noble head, the eyes full at once of thought and of kindness; he drew the look of observers on him wherever he appeared."

Reference: Olmstead, J. M. D.: Claude Bernard, Physiologist. New York: Harper & Brothers, 1938.—*Contributed by E. Neige Todhunter, Ph.D., Head, Department of Foods and Nutrition, University of Alabama, Tuscaloosa.*

Store vs. Delivered Milk as a Source of Reduced Ascorbic Acid[1]

ARTHUR D. HOLMES, Ph.D.

Massachusetts Agricultural Experiment Station, Amherst

IT HAS been repeatedly shown that milk as it is obtained from the cow is a good source of reduced ascorbic acid. In fact, if the ultimate consumer of milk could receive the 20 to 25 mg. per liter of reduced ascorbic acid originally present, it would supply, in an acceptable, natural form, a significant portion of his daily requirements for that vitamin. Sharp, Guthrie, and Hand (1) stated that actually there is in the milk obtained each year from the cows in the United States approximately as much ascorbic acid as is present in the entire citrus crop produced in this country. Unfortunately, the conditions of pasteurization, distribution, and storage in the home cause the destruction of a significant portion of the ascorbic acid that is originally present in fresh milk. As a consequence, it is generally believed that commercial market milk is only a fair source of reduced ascorbic acid.

Ordinarily, the ultimate consumer obtains milk for household use by the dealer-retail, house-to-house delivery system, or from a nearby grocery store. In most localities, the major portion of the retail milk is distributed by the delivery system, although a considerable amount is handled by stores, particularly the chain grocery stores. Store milk may not reach the ultimate consumer as promptly as delivered milk, but the house-to-house system has quite generally adopted the alternate-day delivery plan. The time that elapses between the obtaining of milk from the cow and the ingesting of it by the ultimate consumer is very important, for Hand (2), Gunsalus and Hand (3), Holmes (4), and others have shown that milk loses its reduced ascorbic acid very rapidily during the first few days after it comes from the cow.

Accordingly, this study was undertaken in 1949 to determine the comparative ascorbic acid potency of store and home-delivered retail commercial milk in the Amherst, Massachusetts area.

[1] Contribution No. 776, Massachusetts Agricultural Experiment Station. Received for publication September 20, 1950.

EXPERIMENTAL PROCEDURE

One hundred and twenty-six samples of commercial retail milk were obtained from four local stores and from five households that were supplied by dairies which deliver house-to-house. For convenience these sources have been designated *A*, *B*, *C*, and *D* for the store milk and *E*, *F*, *G*, *H*, and *I* for the delivered milk. Fourteen samples were obtained from each store or home at intervals during a period of ten to eleven months, and it was felt that these samples were representative of the milk that was being purchased by the average customer.

The samples of both the store and delivered milk were taken from quart bottles in which the milk was regularly distributed. The milk from Source *D* was supplied in waxed, conical, cardboard cartons; the milk from all the other sources was distributed in commercial flint glass milk bottles.

The store milk was kept in a refrigerated, illuminated, glass-sided display cabinet, but information was not available regarding the length of time that the various bottles of milk had been so exposed. Also, data were not obtained concerning the length of time the delivered milk remained on porches exposed to light of varying intensity. It was assumed that in view of the number of samples from each source and the extended period of collection, the exposure of both store and delivered samples was similar to that for milk ordinarily distributed from these sources.

The milk samples were assayed for reduced ascorbic acid by Holmes' (5) modification of Sharp's (6) rapid method.

RESULTS AND DISCUSSION

The amount of reduced ascorbic acid found in the individual samples of milk is reported in Table 1. The uniformity of the reduced ascorbic acid content of individual samples of delivered milk from Sources *F* and *I*, and for the four series of store milk samples was much greater than for the delivered milk from Sources *E*, *G*, and *H*. The average reduced ascorbic acid content of all the samples of

store milk was 3.8 mg. per liter, and that of all the samples of delivered milk was 6.3 mg. per liter. Hence, one could conclude that delivered milk in this locality is somewhat superior to store milk as a source of reduced ascorbic acid. However, the average value for reduced ascorbic acid for Series *I* of the delivered milk was 3.2 mg. per liter, a value which approximates the 3.0 mg. and 3.3 mg. per liter for Series *A* and *B* of the store milk; and the average value for Series *F* of the delivered milk, 5.4 mg. per liter, was the same as 5.1 mg. per liter for Series *C* of the store milk.

It is of interest to compare the values obtained in Series *D* and *E*. These series of samples came from quart bottles of milk that originated in the same dairy and were sold under the same label. The *D* and *E* samples of each of the fourteen pairs were collected at approximately the same time, taken to the laboratory and assayed simultaneously. Twelve of the fourteen pairs of samples showed more reduced ascorbic acid in delivered than in store milk. It is possible that the *D* series of store milk was older than the *E* series of delivered milk; but it should be recalled that the delivered milk was placed on the customers' doorstep and exposed to light in commercial flint glass milk bottles, whereas in the D series the milk was protected from the light of the illuminated store showcase by waxed cardboard cartons. Since the cardboard cartons were not tested for porosity, no data are available regarding the extent to which light was excluded from the interior.

Tracy (7), Wheaton, Lueck, and Tanner (8), Guthrie, Hand, and Sharp (9), and others have studied various phases of the use of paper milk cartons, and the latter investigators state that paper cartons decrease markedly the effect of sunlight on the oxidation of ascorbic acid. Henderson, Foord, and Roadhouse (10) tested the effect of sunlight on the ascorbic acid content of milk exposed in three different types of paper containers and concluded that paper containers give greater protection against light rays than clear glass bottles, but that paper containers vary greatly in their ability to protect milk.

A large number of the samples of milk contained relatively little reduced ascorbic acid. This was particularly true for the major portion of the store milk and for Series *I* of the delivered milk. It is well known that reduced ascorbic acid in milk is oxidized readily, especially if the milk is exposed to bright light, but the amount of oxygen in milk is variable. Guthrie (11) reported that there is little if any free oxygen in milk in the cow's udder. Sharp, Guthrie,

TABLE 1

Reduced ascorbic acid in store and home-delivered milk

SAMPLE	REDUCED ASCORBIC ACID								
	Store Milk				Home- Delivered Milk				
	Store A*	Store B†	Store C‡	Store D#	Home E¶	Home F‖	Home G**	Home H††	Home I‡‡
	mg./l.	*mg./l.*	*mg./l.*	*mg./l.*	*mg./l.*	*mg./l.*	*mg./l.*	*mg./l.*	*mg./l.*
1	3.1	2.6	5.3	2.6	3.7	9.9	11.6	12.3	3.8
2	3.1	2.7	6.3	3.7	11.6	9.0	7.7	11.6	3.2
3	2.6	2.7	5.9	2.4	6.3	9.0	7.4	8.5	3.2
4	3.1	3.2	4.2	3.1	3.6	3.7	8.4	9.0	3.2
5	2.6	3.2	3.1	5.3	6.2	4.8	3.3	9.1	3.2
6	3.6	4.3	5.7	6.3	5.2	3.8	8.1	8.5	2.7
7	2.6	3.9	6.8	5.2	5.2	3.8	3.2	11.1	3.2
8	3.1	3.6	4.1	3.1	3.6	3.7	4.2	9.0	3.7
9	3.2	3.0	5.8	3.1	5.6	3.8	10.6	9.0	3.7
10	2.6	3.1	5.8	3.6	5.6	4.8	8.5	5.9	3.1
11	3.2	2.8	5.8	3.6	5.7	5.9	6.9	5.8	2.6
12	2.6	3.2	4.2	3.1	3.6	4.3	6.4	9.5	3.2
13	3.2	3.2	4.2	6.8	12.0	4.2	7.9	4.3	3.1
14	3.2	4.2	3.7	3.1	13.3	5.3	4.8	13.3	2.6
Average	3.0	3.3	5.1	4.0	6.5	5.4	7.1	9.1	3.2

* Chain store; milk distributed by syndicate, labeled "regular" grade.
† Chain store; milk distributed by syndicate, labeled "modified, homogenized, vitamin D."
‡ Independent store; handled milk from small local dairy.
# Independent store; handled milk from large local dairy, labeled "family milk"; cardboard carton.
¶ Milk produced by same large local dairy which supplied Store D.
‖ Milk produced by local Jersey herd.
** Milk produced by local herd of mixed breeds.
†† Retail milk distributed by milk syndicate.
‡‡ Milk distributed by local dairy farmer.

and Hand (1) found that the dissolved oxygen content of milk increased as a result of handling in the plant until the milk approached saturation at cold temperature, and these same investigators have stated (12) that the amount of oxygen in commercial milk taken from filled quart bottles varied from 11.45 mg. per liter to 13.10 mg. and averaged 11.89 mg. per liter. Obviously, the oxidizing of reduced ascorbic acid can continue only as long as free oxygen is present in the milk. In discussing the presence of only a relatively small amount of reduced ascorbic acid in milk, Guthrie, Hand, and Sharp (9) stated, "We interpret this as indicating that the milk did not contain enough oxygen to oxidize all of the reduced ascorbic acid present."

The average values for reduced ascorbic acid, 3.8 mg. per liter for 56 samples of store milk and 6.3 mg. for 70 samples of delivered milk, were within the range of values reported by various investigators. Hawley (13) collected retail milk from delivery wagons during May and June and found that 100 samples contained an average of 9.0 mg. ascorbic acid per liter. Woessner, Elvehjem, and Schuette (14) assayed commercially pasteurized milk distributed by several city dairies and obtained values ranging from 1.9 to 14 mg. reduced ascorbic acid per liter, with an average of 8.9 mg. Mawson and Kon (15) concluded, from the assays of 75 samples, that by the time milk, pasteurized by official methods, reached the ultimate consumer, it contained 6.9 mg. ascorbic acid per liter. Guthrie, Hand, and Sharp (9) assayed 1502 samples of three-day-old pasteurized milk and reported an average of 2.9 mg. reduced ascorbic acid per liter. Burgwald and Josephson (16) reported that ½-pt. samples continuously refrigerated and not exposed to light retained little ascorbic acid after one day in storage. In a study of ascorbic acid in dairy products, Stewart and Sharp (17) collected 127 samples of milk sold on home delivery routes in quart glass bottles and 237 samples of milk sold in retail stores in quart cartons. In the former, the values for reduced ascorbic acid averaged 2.7 mg. per liter, and in the latter, 3.7 mg.

SUMMARY

One hundred and twenty-six samples of retail milk obtained from local stores and homes supplied by dairies which deliver house-to-house were assayed for reduced ascorbic acid. The average amount of reduced ascorbic acid found in the store milk was 3.8 mg. per liter and that of home-delivered milk was 6.3 mg. per liter. Attention was called to the enormous loss of reduced ascorbic acid from milk between the time it is drawn from the cow and its ingestion by the ultimate consumer. Steps should be taken to reduce this unfortunate loss of an essential constituent of the human dietary.

REFERENCES

(1) Sharp, P. F., Guthrie, E. S., and Hand, D. B.: Deaeration as a means of retarding oxidized flavors and preserving the vitamin C of milk. J. Milk Tech. 4: 138, 1941.
(2) Hand, D. B.: Reduced and total vitamin C in milk. J. Dairy Science 26: 7, 1943.
(3) Gunsalus, I. C., and Hand, D. B.: The use of bacteria in the chemical determination of total vitamin C. J. Biol. Chem. 141: 853, 1941.
(4) Holmes, A. D.: Comparison of the stability of reduced ascorbic acid in raw and pasteurized milk. Am. J. Dis. Child. 78: 899, 1949.
(5) Holmes, A. D.: Rate of destruction of reduced ascorbic acid in riboflavin-fortified pasteurized milk. Food Tech. 4: 92, 1950.
(6) Sharp, P. F.: Rapid method for the quantitative determination of reduced ascorbic acid in milk. J. Dairy Science 21: 85, 1938.
(7) Tracy, P. H.: Certain practical aspects of the use of paper milk containers. J. Milk Tech. 1: 40, 1938.
(8) Wheaton, E., Lueck, R. H., and Tanner, F. W.: Observations on problems relating to the paper milk bottle. J. Milk Tech. 1: 11, 1938.
(9) Guthrie, E. S., Hand, D. B., and Sharp, P. F.: Expulsion of air proposed to prevent destruction of vitamin C and development of oxidized flavor in milk. Milk Plant Monthly 28: 26 (April), 1939.
(10) Henderson, J. L., Foord, D. C., and Roadhouse, C. L.: Influence of sunlight on flavor and ascorbic acid content of milk exposed in three different types of paper containers. Food Research 5: 153, 1940.
(11) Guthrie, E. S.: The results of deaeration on the oxygen, vitamin C, and the oxidized flavors of milk. J. Dairy Science 29: 359, 1946.
(12) Sharp, P. F., Hand, D. B., and Guthrie, E. S.: Quantitative determination of dissolved oxygen. Indust. & Engin. Chem., Anal. Ed. 13: 593, 1941.
(13) Hawley, E. E.: Vitamin C content of milks: raw, pasteurized, and baby formulae. J. Am. Dietet. A. 14: 275, 1938.
(14) Woessner, W. W., Elvehjem, C. A., and Schuette, H. A.: The determination of ascorbic acid in commercial milks. J. Nutrition 18: 619, 1939.
(15) Mawson, E. H., and Kon, S. K.: Vitamin-C content of milk as consumed. Lancet 2: 14, 1945.
(16) Burgwald, L. H., and Josephson, D. V.: The effect of refrigeration storage on the keeping qualities of pasteurized milk. J. Dairy Science 30: 371, 1947.
(17) Stewart, A. P., Jr., and Sharp, P. F.: Vitamin C content of market milk, evaporated milk, and powdered whole milk. J. Nutrition 31: 161, 1946.

Low-Sodium Baking Powder

The following recipe for low-sodium baking powder is reprinted with permission from *Planning Low-Sodium Meals*, published by the Newton, Massachusetts Health Department:

Potassium bicarbonate	39.8 gm.
Cornstarch	28.0 gm.
Tartaric acid	7.5 gm.
Potassium bitartrate	56.1 gm.

Editorial

YOUTH, BEAUTY, AND YOGURT

Years ago the late Mary Swartz Rose held a large audience of dietitians, alternately amused and aghast, in an address, "Belief in Magic" (1). Her comments come vividly to mind as we observe the latest of the many health and dietetic cults which periodically enthrall vast numbers of the citizenry. With seemingly fanatical zeal these devotees follow their deliverer, accepting his every pronouncement as infallible, until a new "system" springs up to lure them afresh.

Yet none of the plotters of these ready roads to well-being, from Couéism to dianetics, from Oom the Omnipotent's dilettantism to Dr. Hay's (2) protein-carbohydrate incompatibility, has ever reached the Olympian heights attained by today's immortal who bears a fittingly Olympic appellation—Gayelord. *Harper's Bazaar* for May, heretofore sacrosanct to beautiful women and a very few male scintillators, such as T. S. Eliot and the 9th Earl of Albemarle, offers a full-page view of Gayelord Hauser marketing in person and gazing masterfully down on a mound of New York carrots. Concisely, the accompanying caption tells Mr. Hauser's success story: "Twenty years ago [he] was generally dismissed as a 'pure food nut.' Today his pungent merchandizing technique, based on the simple premise that practically everyone would like to *Look Younger, Live Longer*, has made his name a household word along with yogurt, blackstrap molasses and wheat germ."

Concurrently, *Cosmopolitan*, not to be outdone, also presents a full-page view of the great man in the truly regal background of his Waldorf suite. From *Diet Does It*, with its reported 200,000 sales, to *Look Younger, Live Longer*, with its 400,000 nonfiction [sic] best seller status and tremendous boost from the *Reader's Digest's* assiduous millions who absorbed its condensation, it is a far cry from the original Helmuth Eugene's metamorphosis into Bengamin Gaylord, to our now resplendent Gayelord—self-styled "doctor, not of medicine but of natural science." Ever since the Bureau of Investigation of the American Medical Association began to follow Mr. Hauser's career with what one writer terms "painstaking, if frustrated, tenacity," he has been wary of the M.D. title on his letterhead. But he parries the situation delicately with this characteristic bit of sophistry: "Even if I were not licensed to practice a healing art, I would feel that I had earned the right to this title."

With his currently reported $10,000-a-week income, Mr. Hauser appears content to let bygones be bygones and generously bears no grudge against the American Medical Association or its *Journal*, since references to both are cleverly inserted in his current masterpiece. Now he is simply and profitably "a dietitian, nutritionist, lecturer and writer" as he travels "all over the United States and Europe" to meet his "People—spelled with a capital P." He writes that he meets them also in another place—"the shelves of the nearest library" for "many of these library-shelf people also are People." This sentence, worthy of Gertrude Stein, reminds us that at least one fine public library in the Pacific Northwest does not list Mr. Hauser's *Look Younger, Live Longer* or his earlier "works," hence presumably would be off his beat.

The slick admixture of the orthodox and the unorthodox in Mr. Hauser's current opus might well bewilder the naïve, should such be found in the medical, nursing, or dietetic professions. Along with references to Elizabeth Arden, Bircher-Benner, John Dewey, Father Kneipp, and Dorothy Dix, Mr. Hauser stirs in more than a dash of Norman Jolliffe, the Mayo brothers, The Johns Hopkins Hospital, Lillian Gilbreth, and Henry C. Sherman—among many others. Cheek by jowl in the list of appended references are Serge Voronoff and S. B. Wolbach, Louis Berman and L. Jean Bogert. Thus the bait is set for the adherents of what Mrs. Rose referred to as "sciosophy"[1] or the science of systematized ignorance—"a science without labor or pains which keeps the mind from melancholy."

But beyond this appeal to the pseudo-scientific, Mr. Hauser offers another enticement not touched upon by Mrs. Rose—that of Glamour. Along with yogurt, magic, and sciosophy, glamour has been the password to Mr. Hauser's present munificence. This popular essence of modern romance, glamour, in reality is the priceless ingredient in his book which appeals to every bored and restless housewife with the time to read it. Chatty little references to real and pretended nobility and royalty, and what are known as the international and Hollywood sets, provide a suitable aura for the yogurt and molasses, giving them irresistible taste appeal for those whom the *Cosmopolitan* calls the "common ordinary rich." The final cachet was bestowed on the French edition of *Look Younger, Live Longer* when the New York *Times Book Review* reported in January that the Duchess of Windsor had written its introduction.

[1] Webster's Unabridged now includes this useful term and its source.

Professional and scientific groups and law enforcement agencies, never ones to jump the gun, waited until the latest Hauser snowball had rolled up several hundred thousand sales before taking action. In March, the New York *Times* reported that the Food and Drug Administration had filed a complaint against Mr. Hauser while agents seized a shipment of blackstrap and copies of his book. Charges were that labels on the molasses failed to specify the vitamin, mineral, and other "special properties" as required for special dietary use, and that the books accompanying the molasses "grossly misrepresented" the benefits derived from its use! Meanwhile Mr. Hauser goes merrily on his way.[2]

Consumers Union in its *Consumer Reports* for February 1951 carried a review by its medical advisor on the Hauser best seller. He termed it "a farrago of silly generalizations and commonplaces, blended with misunderstood borrowings from scientific research . . . most unfortunate . . . is its advice for self-treatment." Continuing, he quotes the "never modest" Mr. Hauser's statement: "The growing amount of evidence points unmistakably to the fact that an adequate nutritional diet such as I have been advocating for the last thirty years is an important factor in preventing [cancer]. . . ." The reviewer concludes: "Such instances of misinformation . . . or simple distortion and fabrication can be found on almost every page." Yet "his [Hauser's] appeal is nearly irresistible to millions of Americans."

Earlier, a book reviewer in the September 1950 *Modern Hospital* commented: "One cannot dismiss this book by saying flatly it is completely unsound. . . . One can say it *is* misleading . . . . The real danger . . . is that the extravagant claims and glamour appeal will so bewitch the reader as to make him feel immune to the possible need for medical attention. The tragedy is that more than the hocus-pocus of the five 'wonder foods' or the magic circle of the 'Live Longer' diet is needed to safeguard man from heart disease, cancer, diabetes, gray hair and baldness."

Meanwhile the American Molasses Company, no less, according to the *Food Field Reporter*, has been busily planning a promotion campaign to offset the effect of the blackstrap furor. To them, blackstrap molasses has never been considered an edible food, having been (before Hauser) largely used in the manufacture of industrial alcohol. Blackstrap, they solemnly state, results from the *third* boiling of the sugar cane juice, is "burnt and bitter and black in color"—verily a fitting component of a witch doctor's brew.

As for yogurt, this Levantine-inspired product enlivened with *Lactobacillus bulgaricus* and spiked with *Streptococcus lactis* is being very profitably marketed everywhere since it is a "must" on the "Live Longer" diet. As the *Cosmopolitan* comments somewhat acidly, "While it is too early to know whether Hauserites will live to be a hundred, it is quite conceivable that, because of him, some people will die very rich." And now that the shops are selling Yogurta Face Cream, presumably if *you* don't live longer, at least your face will.

In a lighter vein, the comics and the cartoonists and the versifiers, too, have had a field day with Mr. Hauser. The *New Yorker's* Newman Levy composed an ode to him, with the last stanza sourly jeering

> So a plague on your book, Gayelord Hauser,
> And a plague on your vitamins, too!
> . . .
> With reinforced yogurt I'm through, I'm through!

The Chicago *Tribune's* Harry Hanson reports that our hero's name was Helmut "but he translated it into Gayelord." The amiable Mr. Hanson adds, "He is a godsend to the black molasses trade . . . and I suppose the yogurt business. Ironing board production also must be up since you are supposed to lie on an ironing board with feet elevated and head down so that the blood can better reach your upper story . . . helps nourish hair. Bald men should use pillow."

Is there a moral to all this—one which might be applicable as well in legitimate circles? If so, and again quoting Mrs. Rose, it might be this: People want "authority, a pillar to lean against." They want to be told, convincingly and clearly, what they should do. They will listen to the teachings of sound nutrition if couched in simple, perhaps unconventional terms, rather than the dry and sober language of scientific authority. They like to have their instruction sparked and enlivened with vivid references and personalities.

Since the dawn of history man has sought the elixir of youth. As old, too, as the story of Adam and the apple, is man's belief in the specificity of certain foods. There will always be those who, with specious reasoning, would claim to have divined the elixir in some one food or very limited group of foods. The realm of nutrition and dietetics, unfortunately, has always been and probably always will be a happy hunting ground for those who would pervert scientific findings to their own advantage.

REFERENCES

(1) Rose, M. S.: Belief in magic. J. Am. Dietet. A. 8: 489, 1933.
(2) Hay diets. J.A.M.A. 104: 402, 1935.

—Mary P. Huddleson, Former Editor, Journal of the American Dietetic Association.

[2] *Publisher's Weekly* for April 28, 1951, reports that due to certain legal "technicalities" (such as the statement included in the judge's decision that the book "was a legitimate publication for bona fide sale even in a food store"), the seizure has been vacated.

According to the American Dry Milk Institute, home use of dry milk solids has increased 183 per cent between 1949 and 1950, from 6 million lb. in 1949 to 17 million lb. in 1950.

Current Comment

EFFECT OF ALTERING MILK SOLIDS CONTENT ON THE ACCEPTABILITY OF CERTAIN FOODS[1]

DOROTHY L. HUSSEMANN, PH.D.

Department of Home Economics, University of Wisconsin, Madison

There is perhaps no more universally accepted tenet among dietitians than their belief in and advocacy of the importance of milk in the diet. They are quick to urge the use of liberal quantities of milk in the diet of most people, except those who suffer from certain abnormal conditions of health. That more than the usual quantity of milk could be incorporated into selected prepared dishes by adding certain milk solids, with attendant nutritive benefits, is a possibility. Recipes have been reported as successful which include substantially increased quantities of milk in the form of dry milk solids (1–3). It appears, however, that further work which seeks to evaluate critically the products prepared by incorporating increased milk solids may be of value.

As a part of a study which sought to investigate outlets for dried milk which resulted from the large productive capacity built up during World War II, an opportunity was available to evaluate selected prepared dishes typical of those appearing on quality food service menus. Nonfat dry milk solids and dry whole milk as well as evaporated milk were compared as milk sources. The economists were interested in determining whether, at any specific concentration of milk solids, acceptable dishes could be prepared, using the respective milk sources. Hence, palatability tests were made on products in which the content of milk solids was lowered as well as those in which it was increased. From the nutritionists' viewpoint, only those formulas which contained added milk solids would appear to be of interest, and thus the results of the work which centered around this type of product only are reported here.

Palatability of the prepared food, as judged by a taste panel and by consumer preference tests, were the means used for evaluation. The primary purpose in establishing a taste panel was to explore the range of possibilities and to determine the limits of increasing the content of milk solids in the prepared foods under study. Final judgment of the products was made only after consumer reaction was tested by submitting samples of the foods to large groups of people for comparison.

PROCEDURE

The prepared dishes which were selected for study included: scalloped potatoes, baked custard, chocolate blanc mange, and creamed salmon and peas. No attempt was made to develop recipes especially designed for the addition of the milk solids. Instead, a standard recipe was selected for each product and the quantity of milk solids was varied according to plan (4). In the preparation of the scalloped potatoes, a thin white sauce was added to the raw, sliced potatoes and the whole was baked in a 350°F. oven. The ingredients for the custards were combined and baked in custard cups placed in a shallow pan of water, to an internal temperature of 85° to 86°C. Cocoa was used as the flavoring for the chocolate blanc mange, and no egg was included. After combining the liquid and the dry ingredients, the mixture was placed over the direct heat and brought to maximum thickness, with constant stirring. It was then covered and cooked for 30 min. over boiling water, with stirring at 5-min. intervals. For the creamed salmon and peas, salmon which had been boned and flaked and canned peas were added to a medium white sauce, and the mixture was heated in the top of the double boiler for 30 min.

Observations were made by the taste panel to determine possible acceptance of the products under consideration when prepared with increased milk solids, using evaporated milk, nonfat dry milk solids, or dry whole milk. On the basis of these preferences, various samples were offered for consumer acceptance as outlined in Table 1.

The results obtained from the judging by the taste panel are not detailed in this paper. However, on the basis of the statistical analysis of the taste

[1] This paper is based on a study published by Hugh L. Cook and Dorothy L. Hussemann, Wisconsin Agricultural Experiment Station Research Bulletin No. 164. Grateful acknowledgment is made to Virgene Mullendore Engberg for technical laboratory assistance, to Professor Harlow Halvorson for statistical analysis and suggestions, and to the Oscar Mayer Company, Madison, for the use of facilities in its plant cafeteria. The study was financed by funds provided by the Agriculture Research and Marketing Act of 1946. Published with the permission of the Director of the Wisconsin Agricultural Experiment Station. Received for publication May 2, 1950.

TABLE 1

Series of food samples employed in consumer acceptance tests

SERIES	FOOD TESTED	NUMBER OF TASTERS	CHOICES OFFERED			
			Alternative 1		Alternative 2	
			Type of milk used in food preparation	Alteration of milk solids from usual concentration	Type of milk used in food preparation	Alteration of milk solids from usual concentration
				%		%
A	Scalloped potatoes	445	Fluid milk	0	Nonfat dry milk solids	+20
B	Baked custard	103	Nonfat dry milk solids	0	Nonfat dry milk solids	−20
C	Baked custard	449	Fluid milk	0	Nonfat dry milk solids	0
D	Baked custard	329	Nonfat dry milk solids	0	Nonfat dry milk solids	+20
E	Chocolate blanc mange	358	Fluid milk	0	Dry whole milk	−10
F	Chocolate blanc mange	348	Nonfat dry milk solids	−10	Dry whole milk	−10
G	Chocolate blanc mange	208	Dry whole milk	+10	Dry whole milk	−10
H	Creamed salmon and peas	289	Fluid milk	0	Nonfat dry milk solids	+50

panel data, samples of scalloped potatoes, baked custards, chocolate blanc mange, and creamed salmon and peas were selected which were submitted to adult consumer groups for further evaluation. The choices offered these groups in each series of experiments are recorded in Table 1. The consumer preference tests for baked custard and chocolate blanc mange were conducted in an industrial cafeteria, while the tests for scalloped potatoes and creamed salmon and peas were carried on in university classes. The technique involved serving each person a small amount of each of two samples of prepared food. On a ballot, the person indicated whether he preferred one of the two samples, had no preference, or would refuse to eat either sample. To the data thus collected, tests of significance of percentages were applied.

RESULTS AND DISCUSSION

Scalloped Potatoes

The scalloped potatoes using the fluid milk had excellent flavor and color, but a curdling of the milk in the sauce was regularly observed. This was likewise true when the scalloped potatoes were prepared using nonfat dry milk solids or dry whole milk in usual concentrations[2] of milk solids. The scalloped potatoes made from evaporated milk with milk solids at the usual level resulted in a distinctive, somewhat more yellow appearing product and an increased curdling of the sauce. As the milk solids were increased, the samples in which nonfat dry milk solids were used showed an increased amount of curdling, a thicker sauce, and a browner crust, while those using the dry whole milk showed an increased curdling, a thicker sauce, and increased fat separation. Increasing the milk solids in the form of evaporated milk also resulted in a thicker, more curdled sauce.

In the consumer preference test in which students were asked to compare scalloped potatoes prepared with fluid milk and prepared with nonfat dry milk solids (Table 1 Series A), however, only a slight preference was shown for the product prepared with fluid milk over that prepared with a 20 per cent increase in the nonfat dry milk solids. Of the 445 tasters, 43.1 per cent preferred the scalloped potatoes made with fluid milk, 39.1 per cent preferred the product made with the nonfat dry milk solids at an increased level of 20 per cent, and 17.7 per cent had no choice. These differences were not statistically significant, which would indicate that milk solids as nonfat dry milk solids might be increased in this product without developing antagonism to it.

Custards

The appearance and texture of the custards made with fluid milk, nonfat dry milk solids, or dry whole milk at the usual level were typical of a standard baked custard, although the temperature required to produce gels of similar consistencies was 1°C. higher when the dried milks served as the milk source. As the milk solids were increased for the two types of dry milks, the custards became more compact and lost the delicate structure typical of a standard custard. Conversely, when the content of milk solids of the custards using the dry milks was decreased, the gel became more delicate and finally the structure broke at low levels. The custard prepared with the evaporated milk, using the usual level of solids, resulted in a product of distinctive color and flavor. The texture of the custards made with evaporated milk was like that of a standard custard. Increasing or decreasing the milk solids, using evap-

[2] "Usual concentration" in this paper is used to denote the condition which exists when the proportion of milk solids to water is in the same ratio as would be present naturally or normally in fresh fluid milk.

orated milk, brought results similar to those for the two types of dry milk but at a slower rate.

Results of the consumer preference test indicated that a significant difference was detectable in the baked custards prepared with fluid milk when compared with those prepared with nonfat dry milk solids at the usual concentration (Table 1, Series C). The choice was in favor of the product made with the nonfat dry milk solids. Further tests indicated no important differences between samples made with nonfat dry milk solids at usual and at 20 per cent above usual concentrations (Table 1, Series D). A reduction of the nonfat dry milk solids by 20 per cent yielded a product which was ranked by a group of 103 students in about the same way as that prepared with the nonfat dry milk solids at the usual concentrations. In general, it would appear that baked custards prepared from nonfat dry milk solids find ready acceptance, and that when desirable from a nutritive standpoint, nonfat dry milk solids might be increased by 20 per cent without appreciably increasing the number of rejections of the product. Consumer acceptance tests on dry whole milk in custards were not made.

Chocolate Blanc Mange

The chocolate blanc mange prepared by the method described and using fluid milk yielded a product which was smooth, of rather firm gel consistency, and of good flavor. It appeared to meet the qualifications for a standard product.

Chocolate blanc manges made with dry whole milk and with nonfat dry milk solids at the usual level were thicker than the similar product prepared with fluid milk. The samples prepared with nonfat dry milk solids resulted in a product with a granular texture and a distinctive flavor. The sample made with evaporated milk at the usual concentration had a thinner and smoother texture and more red color than the other samples. It also had a distinctive flavor.

As the nonfat dry milk content of the samples was increased, the texture became more granular and a thicker pudding resulted. This was true also, though to a lesser extent, of the dry whole milk products. Off flavor, described by the taste panel as an "after taste," became more pronounced as the content of dry milk solids was increased. In the samples made with evaporated milk, increased milk solids resulted in a thicker product with a more distinctive flavor.

Decreasing the milk solids in the samples prepared with either kind of dry milk resulted in a corresponding decrease in viscosity and a less granular texture. When the content of milk solids was reduced in samples using evaporated milk, the product was less viscous and the flavor was less distinctive.

When the fluid milk and different concentration levels of milk solids provided by dry whole, nonfat dry milk solids, or evaporated milk were used the order of preference for the resulting products differed from that found for scalloped potatoes, baked custards, and creamed salmon and peas. It appeared, as indicated by the taster's reactions, that the level to which the content of milk solids could be increased beyond the usual concentration was somewhat lower. It may be observed that evaporated milk ranked well in this test, perhaps because distinctive flavors were masked by the chocolate.

A group of 358 persons were offered a choice between a chocolate blanc mange prepared with fluid milk and one prepared with dry whole milk at a concentration 10 per cent below the usual, (Table 1, Series E). The results of the choices indicated a nonsignificant difference. In another series, 348 persons were asked to choose between chocolate blanc mange prepared with nonfat dry milk solids at a concentration 10 per cent less than the usual levels and one based on dry whole milk containing 10 per cent less than the usual quantity of milk solids (Table 1, Series F). A significant preference was expressed for the sample with dry whole milk. In a third series of samples, tasted by 208 persons, the choice was between two samples of chocolate blanc mange, both of which were prepared from dry whole milk, but in one case, the concentration was 10 per cent below and in the other, 10 per cent above the usual concentrations (Table 1, Series G). The difference in expressed preference between the two was nonsignificant. The overall indication from the results of the consumer preference test was, then, that when dry whole milk was used as a source of solids, it appeared to be possible to increase the quantity of milk solids in chocolate blanc mange by 10 per cent.

Creamed Salmon and Peas

Samples of creamed salmon and peas prepared with fluid milk, nonfat dry milk solids, dry whole milk, or evaporated milk showed no difference in color or texture at the usual concentrations of milk solids. Higher and lower milk solids content in the samples made from dry whole milk, nonfat dry milk solids, or evaporated milk resulted in a thicker or thinner sauce in proportion to the increase or decrease in milk solids.

For the consumer preference test, the alternatives consisted of a product prepared with fluid milk and one which contained nonfat dry milk solids increased 50 per cent above the usual quantity (Table 1, Series H). Two hundred eighty-nine students served as tasters. Based on this number of tests, it was shown that less then $\frac{1}{2}$ per cent would refuse to eat either sample. Of those who expressed no choice (18 per cent), about 4 per cent indicated that they would refuse both samples while of those who preferred the fluid milk product (52 per cent), approximately 2 per cent would refuse the sample in which nonfat dry milk solids had been used. Since 30 per cent preferred the sample prepared with nonfat milk

solids increased by 50 per cent, and so few persons would refuse to eat it, and since the taste panel did not show consistent reactions for increases of milk solids of up to 50 per cent, it seems that it might be possible to prepare a product with 25 to 30 per cent increase in dry milk solids which would have á good consumer acceptance. This hypothesis was not tested however.

To comment more generally on these experiments, it appears that by using concentrated forms of milk, usually dry whole milk or nonfat dry milk solids, it is possible to increase, within limits, the milk solids content of scalloped potatoes, baked custard, chocolate blanc mange, and creamed salmon and peas without significantly decreasing the preference for the resulting products.

On the other hand, in no case did it seem possible to increase the preference for these same products by increasing the milk solids content. However, it must be remembered that as a result of the plan of these experiments, the foods prepared were, in some respects, at a disadvantage. For example, when the dried or evaporated milk was being tested, no fluid milk was included in the food preparation. It might have been possible to obtain a more satisfactory product, if fluid milk had been supplemented with one of the processed milks in such a way as to increase total milk solids. Likewise, greater success as judged by palatability might have resulted had recipes, altered in such a way as to make best use of the processed milks, been employed. This paper does not offer conclusive proof, then, that preference could not have been increased, when milk solids are increased.

It is reassuring to note that even under conditions described here, preference was not decreased. This would indicate that it is possible, within limits, to enhance the existing diet, where indicated, by adding concentrated milks. The type of milk found to be most effective for such nutritional enrichment varied from product to product, as observed here. For example, nonfat dry milk solids found best acceptance in the baked custards, whereas dry whole milk and evaporated milk were found to be more desirable in chocolate blanc mange. A little experimentation by the dietitian would probably indicate with which type of milk and to what extent she could re-inforce nutritive value by added processed milks, in her own situation.

REFERENCES

(1) Paul, P., Brill, A., and Means, S.: Using nonfat dry milk solids. Mich. Agric. Exper. Sta. Circ. Bull. 212, 1948.

(2) Bureau of Human Nutrition and Home Economics and Production and Marketing Administration: School Lunch Recipes Using Nonfat Dry Milk. U.S. D.A. PA-44. Washington: Govt. Printing Office, 1948.

(3) Swickard, M. T.: How to use whole and nonfat dry milk. U.S.D.A. Pub. AIS-86, 1949.

(4) Cook, H. L., and Hussemann, D. L.: Consumer Acceptance of Dry Milks in Quantity Cookery. Wis. Agric. Exper. Sta. Research Bull. No. 164, Jan., 1950.

Dietetic Terminology

In an effort to determine the variation in terminology and in salt or sodium content of diets used for patients with cardiac disease, Dora Colver, Graduate Assistant, Pennsylvania State College, sent questionnaires to hospitals which offer dietetic internships in Massachusetts, New York, Pennsylvania, Ohio, Indiana, Illinois, and Michigan. Replies from 24 hospitals showed that 20 different terms were in use, most hospitals using several terms. Those most frequently reported were: "low-sodium diet," "low-salt diet," and "Kempner diet." Seventeen of the hospitals reported using the term "low-sodium"; 13, "low-salt." "Kempner" was used in 10 instances. The other 17 terms occurred less frequently.

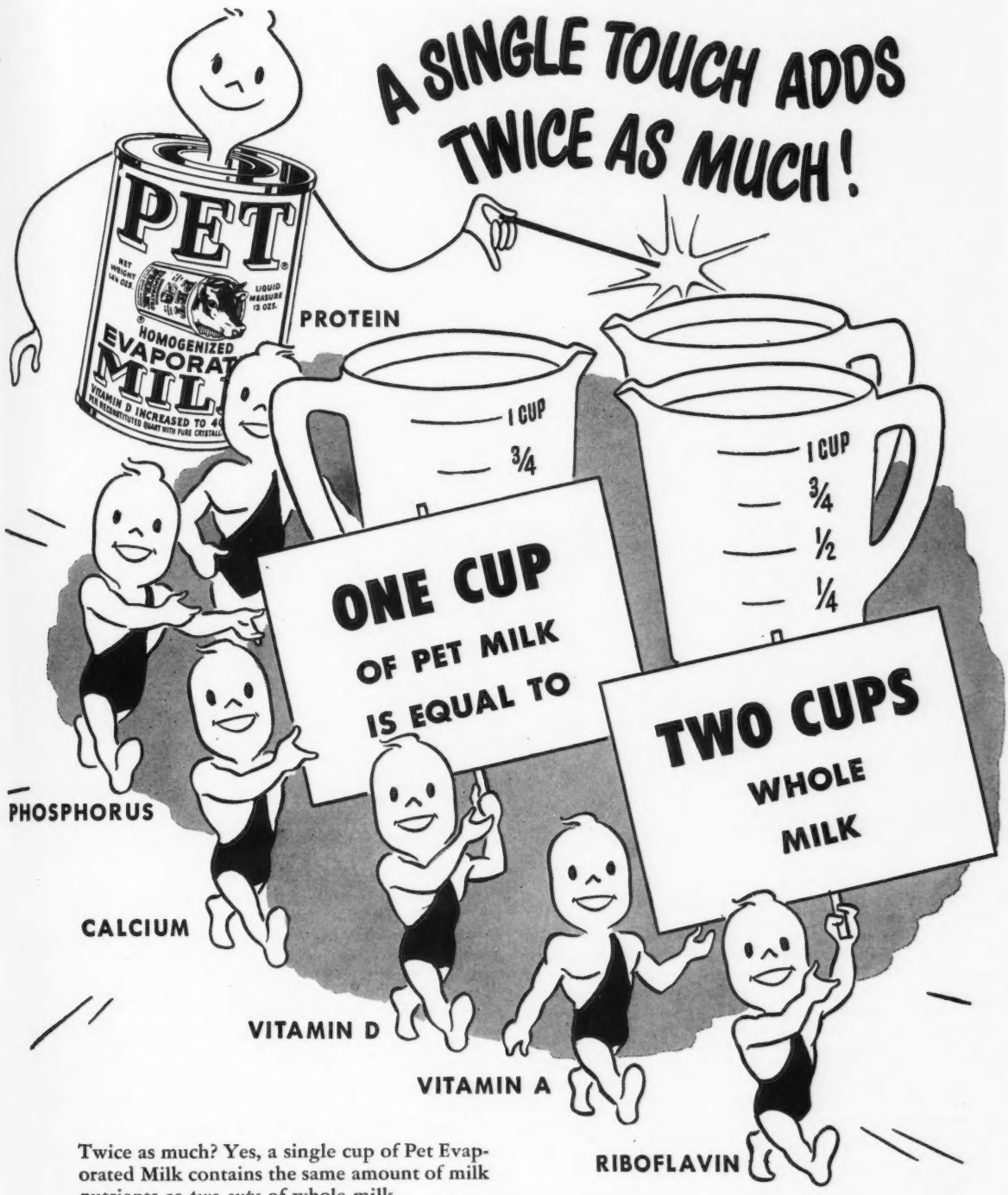
There was a wide variation in the salt or sodium content of the diets, according to these questionnaires. In 8 hospitals, 200 mg. sodium were allowed on the low-sodium diet, while other allowances varied from 125 to 800 mg. When a low-salt diet was used, the range was from 0.8 to 8 gm. salt.

There was little relationship between bed capacity and the number of special diets served or the number of diets for patients with cardiac diseases. There was also no relationship between the bed capacity and the terminology used.

The terminology for the diets had usually been established by a committee of dietitians and doctors or by dietitians alone.

The majority of the dietitians (88 per cent) considered that it would be helpful to standardize the terminology for these diets. In this field, the newly revised "glossary of dietetic terms" (to be included in the forthcoming revision of the *Handbook of Diet Therapy*) will serve a real need for those who wish to bring their definitions up to date. The new definition is: "Restricted Sodium Diet—A diet in which the sodium content is restricted to a prescribed level."

Precision in recommending various sodium levels will avoid the present confusion arising from misinterpretations and unfortunate connotations of words, such as "low," "restricted," "limited," and the misnomer, "salt-free."



Twice as much? Yes, a single cup of Pet Evaporated Milk contains the same amount of milk nutrients as *two cups* of whole milk.

When there's a need to add extra milk to the diet, Pet Milk can be used to double the amount of whole milk nutrients in many tempting dishes.

But that's not all. When costs must be kept low, Pet Milk provides good, whole milk at a cost that is less, generally, than any other form of milk.

Choose Pet Milk for *every* milk need. It is always dependable, always available, always convenient to use and to keep—always your best milk buy.

PET MILK COMPANY **1450-E ARCADE BUILDING, ST. LOUIS 1, MO.**

Book Reviews

Large Quantity Recipes. 2nd ed. By Margaret E. Terrell. Philadelphia: J. B. Lippincott Company, 1951. Cloth. Pp. 414. Price $7.

Members of The American Dietetic Association can claim with pride, and all food service people can use with confidence the second edition of *Large Quantity Recipes* (first edition published under the title of *Quantity Food Service Recipes*).

Some 750 tested recipes, from canapés to desserts, are presented. All are standardized for fifty-portion quantities; ingredients are given both by weight and volume; steps in preparation are listed clearly and simply in order of procedure. Each of the twelve groups of recipes is introduced by a well written set of directions and descriptions.

The indexing is particularly good. A complete, alphabetical page index of the total contents is given at the end of the book; an index for each section is included in the Table of Contents; in addition, each of the twelve sections has its own page index of recipes. It will be a joy to use a collection so indexed for quick identification.

Under the direction of Margaret E. Terrell, all recipes were tested and compiled at the University of Washington, Seattle. A group of four administrative dietitians, Jean Nicholson, Iola Woods, Carolyn Murphy, and Patricia Gross, in addition to the administrative staff of the University of Washington Dining Halls, assisted with the selection, testing, and final compilation.

The recipes can be used any place where quality food is being served to large groups. University food services, hospitals, hotels and restaurants, school lunchrooms, and industrial and commercial cafeterias should all provide their food management personnel with this excellent means of controlling food production. It can be used, too, as a text in quantity cookery classes and in schools of restaurant and hotel management.

"Food may be more than sustenance. The right food may promote good health and long life. Food goodness adds greatly to the enjoyment of living. It is a medium through which all ages and classes of humanity may be reached and benefitted." The author, quoted here, her assistants, and the members of The American Dietetic Association have made a genuine contribution to food service management and to the improvement of quantity food production by this publication.—*Anna M. Tracy, Head Dietitian and Professor, Restaurant and Hotel Management, Florida State University, Tallahassee.*

The Low Fat, Low Cholesterol Diet. By E. Virginia Dobbin, Helen F. Gofman, M.D., Helen C. Jones, Lenore Lyon, and Clara-Beth Young. Garden City, New York: Doubleday & Company, Inc., 1951. Cloth. Pp. 371. Price $3.45.

This is essentially a cook book for people who are asked to follow a low-fat, low-cholesterol diet. It tells what foods can be used and how to lend interest and variety to the meals. Sources of cholesterol and fats are stressed.

Four sample dietary plans, using varying amounts of fat and cholesterol, are presented. The fat is restricted to 25 to 50 gm., and cholesterol from 15 to 140 mg. In other respects, the dietary plans meet the National Research Council's recommended allowances.

There are some excellent suggestions for people who must choose a meal in a restaurant as well as for those who can take a box lunch from home. Consideration has also been given to those who, in addition to low-fat, low-cholesterol restriction, require variations in intake of calories, carbohydrate, and sodium.

In some sections of the book, there seems to be undue attention given to such things as "glutenburgers" and yogurt.

This book could be a helpful reference for anyone who plans or prepares food which must be low in fat and cholesterol content.—*Elmira Blecha, Assistant Director of Dietetics, University Hospital, University of Michigan, Ann Arbor.*

The Art of Serving Food Attractively. By Mary Albert Wenker. Garden City, New York: Doubleday & Company, Inc., 1951. Cloth. Pp. 190. Price $2.45.

Here is a helpful manual for anyone who prepares food. Simple rules for garnishing are followed by chapters giving hundreds of suggestions for adding color, flavor, and texture contrasts to all foods commonly served.

Mary Albert Wenker is Director of Home Economics, Mount Mary College, Milwaukee. Her many years of experience and interest in food preparation are clearly shown by the care with which she has written this book.

The book is designed primarily for homemakers who enjoy serving attractive meals to their families and guests. But, because attractive food is equally as important in institutional food service, a copy of this book would be helpful in every dietary department.

"Ideas for Bed Trays" is a chapter worth the price of the book alone to those who plan holiday favors. "Plate and Platter Arrangements" would be a boon to those serving buffet meals and smorgasbords and planning receptions and cocktail parties. Illustrations by Helen Disbrow add the final helpful touches.—*Virginia Monahan Bayles, Department of Home Economics, University of Colorado, Boulder.*

Stonington Cooks and Cookery. By Jennie Weems Brown and Helen Wheeler Denison. Stonington, Connecticut: The Pequot Press, 1949. Paper, spiral bound. Price $2.50.

This little collection of recipes is of great historic interest in the region in which it is printed. One hundred twenty-five recipes from grandmothers and great-grandmothers of present-day citizens are included. Most have been taken from old cook books published during the last century by churches in Stonington Township, Connecticut.

Most of the recipes are practical, time-tested ones typical of New England. A few of the "2 doz. eggs and 1 qt. of thick cream" variety have been included for atmosphere.

Charming illustrations accompany the chapter headings on Soups, Seafoods, Meats and Poultry, Breadstuffs, Pie and Pastry, Cookies, Cakes, Puddings, Desserts, Relishes and Preserves.

The ancestral descriptions given at the end of each recipe are undoubtedly of local interest.—*Virginia Monahan Bayles, Department of Home Economics, University of Colorado, Boulder.*

The Bedside Set That Provides

improved sterility
longer service
greater savings

is Stainless Steel POLAR WARE*

Illustrated — Bedside tray, water bottle, tumbler.

Illustrated — Plate cover, tea pot, creamer, sugar bowl, serving tray.

There is so much to be said for stainless steel Polar Ware tray sets that it is difficult to determine which advantages are the most important. Consider that under ordinary usage you can't break these good-looking modern pieces — nor dent or stain them. They hold their "like new" appearance for years — and their cheerful, gleaming aseptic surface makes patients feel pampered and well-cared for. Washing is easy, sterility assured for all Polar Ware service items are deep drawn — completely free from cracks or fissures that might harbor bacteria.

For these good reasons and many more, hospitals everywhere are replacing worn out utensils with Polar Ware . . . for they recognize that by any yard-stick for measuring results received from dollars invested, Polar Ware tray sets can't fail to show the lowest final cost. That's why leading hospital supply houses from coast to coast carry this time-proved, time-tested line that backs up their good reputation. Ask the men who call on you for full information.

Polar Ware Co. 4100 LAKE SHORE ROAD SHEBOYGAN, WISCONSIN

Current Literature

Contributed by Mildred Bonnell and administrative interns, University of Washington, Seattle; Janette C. Carlsen and Ethel M. Miller, The Johns Hopkins Hospital, Baltimore; Margaret Delaney, American Institute of Baking, Chicago; Elva Hiscock, University of Illinois College of Medicine, Chicago; Pauline Kegereis, The Children's Mercy Hospital, Kansas City, Missouri; Berdena Rosenow, University of Kansas Medical Center, Kansas City, Kansas; and the Journal staff

THE AMERICAN JOURNAL OF NURSING

Vol. 51, March, 1951

* Nutrition in the treatment of the chronically ill. J. I. Goodman —p. 165.

Vol. 51, May, 1951

Radiation effects of an atomic bomb on water, food, and milk. G. W. Moore. —p. 289.

* Some hints on writing references.—p. 306

Nutrition and the Chronically Ill. Since many chronically ill individuals are aged, the leading nutritional defects in mature and aged persons are discussed (protein, calcium, and iron). One of the diseases in which nutrition is greatly affected is rheumatoid arthritis. Two case histories are presented on this subject. Excellent suggestions are included for steps to be taken in the correction of malnutrition.

Writing References. Instructions are given for writing references for nurses. The points discussed are applicable to writing references for other professional people.

AMERICAN JOURNAL OF PUBLIC HEALTH

Vol. 41, April, 1951

* The relation of nutrition to susceptibility to toxic substances. M. E. Shils. —p. 417.

Nutrition and Toxic Substances. Two questions serve as the basis for a discussion of nutrition as related to toxic substances: (a) Can nutritional factors influence resistance to toxic substances? (b) Are nutritional requirements of the individual altered by exposure to poisons? Compounds of industrial interest are used for illustrations; both human and animal experiments are cited.

FOOD RESEARCH

Vol. 16, March-April, 1951

* Some effects of processing on the nutritive properties of proteins. R. R. Baldwin, J. R. Lowry, and R. Thiessen, Jr.—p. 107.

Some Effects of Processing Protein. The non-enzymatic browning reaction (Maillard reaction) has been demonstrated by animal assay methods and by microbiologic analyses to be an important consideration from the nutritional standpoint in the processing of food materials. Rapid destruction of some of the essential amino acids resulted when casein was autoclaved with dextrose. There was also some evidence of decreased digestibility of the protein.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

Vol. 145, April 14, 1951

* Cottonseed oil sensitivity. Correspondence.—p. 1216.

Vol. 145, April 21, 1951

* Arteriosclerosis. Recent advances in the dietary and medicinal treatment. L. M. Morrison.—p. 1232.

Vol. 146, May 5, 1951

* Frozen orange juice concentrate. Council on Foods and Nutrition.—p. 35.
* Frozen foods. Editorials and Comments.—p. 37.

Cottonseed Oil Sensitivity. In this correspondence, exception was taken to the proposition that respiratory allergy follows ingestion of cottonseed oil. The writer pointed to the fact that the oil does not contain the water-soluble cottonseed allergen.

Arteriosclerosis. Evidence is reviewed in this article which presents arteriosclerosis, whose clinical aspects are better known as atherosclerosis, as a metabolic disorder that rests on a triad of complex factors. A program of treatment is presented which includes instructions for a low-cholesterol, low-fat diet (20 to 25 gm. fat daily). A sample menu for one day is charted.

Frozen Orange Juice Concentrate. The Council on Foods and Nutrition of the American Medical Association states that frozen orange juice concentrate can be as valuable in nutrition as fresh orange juice. The concentrate is eligible for the Council's seal when it contains not less than 40 mg. ascorbic acid in each 100 ml. reconstituted juice and when advertising claims are proved. Three brands which have fulfilled the requirements of the Council are listed.

Frozen Foods. The nutrients of frozen foods were compared with those of fresh foods. Present information indicates that when frozen foods are selected, prepared, and stored according to the best available scientific knowledge, they compare favorably in nutrient content and flavor with the fresh product.

THE JOURNAL OF BIOLOGICAL CHEMISTRY

Vol. 189, April, 1951

* The influence of folic acid on methionine metabolism. J. S. Dinning, C. K Keith, and P. L. Day.—p. 515.

Folic Acid and Methionine Metabolism. It has been suggested that folic acid functions in the choline oxidase enzyme system, and that folic acid is involved in creative synthesis. Therefore, the effects of folic acid on methylation reactions of chick tissues were studied. Livers from folic acid-deficient chicks oxidized choline at a reduced rate and exhibited a reduced ability to form methionine from homocysteine or homocystine in the presence of added choline or betaine. Dietary supplements of betaine, methionine, or creatine did not alleviate the syndrome of folic acid deficiency in the chick.

THE JOURNAL OF CLINICAL INVESTIGATION

Vol. 30, April, 1951

* Intracellular cation exchanges in metabolic alkalosis. J. R. Elkinton, R. D. Squires, and A. P. Crosley.—p. 369.

Intracellular cation exchanges in acidosis due to renal insufficiency. Effect of alkali therapy. J. R. Elkinton, R. D. Squires, and R. B. Singer.—p. 381.

* The lipids of serum in pregnancy. J. P. Peters, M. Heinemann, and E. B. Man.—p. 388.

Cation Exchanges in Metabolic Alkalosis. By use of the balance technique, intracellular cation exchanges were studied in ten cases of metabolic alkalosis during treatment.

Training its own!

To ease the shortage of qualified dietitians, physical therapists, and occupational therapists, the Army each year trains young women with the required collegiate preparation and aptitudes in these special fields.

As second lieutenants in the Women's Medical Specialist Corps, these women will serve at the completion of training as members of the military medical team, providing vitally needed care to patients recovering in Army hospitals from injury or illness.

College women under 26 years of age, with appropriate prerequisites, may apply for one of three training programs:

Women's Medical Specialist Corps

Dietetic Internship

For Foods and Nutrition or Institution Management majors, a 12-month course, offered each year at Brooke Army Hospital, Fort Sam Houston, Texas, and approved by the American Dietetic Association.

Physical Therapy Training Course

For Physical Education or Biological Sciences majors, two 12-month courses conducted annually; approved by the Council on Medical Education and Hospitals of the American Medical Association.

Occupational Therapy Clinical Affiliation

For candidates who are students in approved schools of occupational therapy and who have the required credit hours, a 9-month program conducted in selected Army Hospitals and approved by the Council on Medical Education and Hospitals of the American Medical Association.

For complete details on eligibility, pay during instruction, and other benefits, write: The Surgeon General, United States Army, Washington, D. C.

U. S. ARMY MEDICAL SERVICE

These data indicate that although decrease in potassium and increase in sodium is a common intracellular cation disturbance in metabolic alkalosis, other patterns of disturbance may occur, especially when the onset has been abrupt and renal adjustment has not taken place.

Lipids of Serum in Pregnancy. The lipids and precipitable iodine of the serum of thirty-four normal women and five women with medically treated hyperthyroidism were measured at intervals during pregnancy and after delivery. There is evidence to suggest that the lipids may decline slightly in the early weeks of pregnancy. This early decline, if verified, may be related to vomiting in pregnancy. Variability of the decline of lipids after delivery may be connected with lactation, but no such connection could be discerned in this small series of subjects.

JOURNAL OF HOME ECONOMICS

Vol. 43, April, 1951

* Indiana's fight against brucellosis. L. Oberhelman.—p. 268.

Qualifications for home economists in welfare agencies. C. Dunphy.—p. 272.

Brucellosis. Because of the wide-spread prevalence of brucellosis (undulant fever) and the cost to farm income and human health, the Indiana Extension Service has carried on an educational program for prevention since 1947. This program includes the use of movies, exhibits, discussion groups, and demonstrations.

JOURNAL OF THE INDIAN MEDICAL ASSOCIATION

Vol. 19, May, 1950

* Middle class diets. S. Ram.—p. 285.

Vol. 20, October, 1950

Management of the problems of feeding in infancy and early childhood. A preventive psychological discourse. N. G. Mojumdar.—p. 14.

Middle Class Diets in India. Records of food intake for seventeen adults and nine children in two middle class Indian households for four days showed the amounts of essential proteins and definitely assimilable iron to be low. Suggestions are given for making these diets lower in cost but higher in nutritive value.

THE JOURNAL OF NUTRITION

Vol. 43, March, 1951

* The augmentation of the provitamin A potency of carotene when fed in margarine. H. J. Deuel, Jr., S. M. Greenberg, E. E. Savage, and D. Melnick.—p. 371.
* Supplemental value of certain amino acids for lamb protein and nutritive value of protein in different cuts of lamb. R. Hoagland, N. R. Ellis, O. G. Hankins, G. G. Snider, and R. L. Hiner.—p. 423.

The effect of heat treatment on the nutritional value of some vegetable oils. E. W. Crampton, F. A. Farmer, and F. M. Berryhill.—p. 431.

Carotene Potency in Margarine. Preformed vitamin A promoted a growth response of the same order of magnitude when fed in either cottonseed oil or in margarine to vitamin A-depleted rats. On the other hand, carotene when administered in margarine was responsible for a greater-than-theoretical response. With margarine, the physiologic availability of vitamin A from carotene was about 130 per cent (30 per cent greater than when fed in limpid cottonseed oil, despite supplementation of the latter with tocopherols). The fact that only carotene responded to the factors in margarine which promote greater physiologic availability is attributed to carotene's being more sensitive than preformed vitamin A to the effect of environmental factors capable of augmenting the vitamin A response. Both vitamin A and carotene are relatively stable in margarine, even when held at room temperature over a prolonged period.

Nutritive Value of Lamb Protein. Experiments were conducted with young male albino rats to determine: (a) whether lamb protein is deficient in cystine, methionine, leucine, isoleucine, phenylalanine, tryptophan, or valine and (b) the biologic value of the protein in different cuts of lamb. The protein from the entire carcass of lamb was deficient only in cystine or methionine. The nutritive value of the different cuts of lamb is presented also.

THE NEW ENGLAND JOURNAL OF MEDICINE

Vol. 244, April 19, 1951

* The rice diet in ambulatory patients with essential hypertension. D. G. Loofbourow, D. Callahan, and R. S. Palmer.—p. 577.

Rice Diet in Ambulatory Patients. An evaluation of the use of the rice diet in treating 105 patients with hypertension is reported. Of the group, 12.5 per cent strictly adhered to the diet and maintained improvement in blood pressure by Kempner's criterion in a two-year follow-up period. Nineteen per cent of the group died; 56 per cent showed progression of the disease; and 25 per cent seemingly remained stationary as far as their blood pressure was concerned. The factors in favor of and against the use of the rice diet are presented. In ambulatory patients, it produces no better results than more conservative medical therapy. Nevertheless, the rice diet in certain patients severely ill with hypertension apparently causes dramatic reversal of the disease process. It seems that to justify so rigorous a treatment, it must be matched by the actual or impending rigors of the disease.

NUTRITION ABSTRACTS AND REVIEWS

Vol. 20, January, 1951

* The causation of pellagra. H. Chick.—p. 523.

Causation of Pellagra. This review article contains the history and geography of pellagra, presents theories of the etiology, and cites information on the relation between tryptophan and niacin in nutrition. The pertinent facts regarding the cause and correction of pellagra, as known today, are summed up to complete the article.

NUTRITION REVIEWS

Vol. 9, March, 1951

Research and development in the food processing industry. C. Francis.—p. 65.

* Dietary treatment of hypertension.
  I. Clinical studies.—p. 70.
  II. Metabolic and renal studies.—p. 73.

Fluoride content of human diets.—p. 80.

Food allergy.—p. 83.

Vol. 9, April, 1951

* Industrial nutrition. M. Pyke.—p. 97.
* Estrogen and calcium metabolism.—p. 100.

Prevention of tooth decay by tube feeding.—p. 101.

* Glutamic acid and mental functions.—p. 113.

Vol. 9, May, 1951

* Infant foods. F. W. Clements.—p. 129.

Pyridoxine and thiamine therapy in disorders of the nervous system.—p. 131.

Ammonium persulfate for improvement of flour.—p. 139.

* An antivitamin A.—p. 140.

Metabolism of "B vitamins" in newborn infants.—p. 153.

Dietary Treatment of Hypertension. Within the past two years further studies have been made on the effectiveness of certain low-sodium diets, particularly the rice diet. These studies are cited, and it is pointed out that of seventy-five patients observed, approximately one-third had a clear-cut reduction in blood pressure when following the rice diet regimen. This is attributed most importantly to its low-sodium content. Further investigations must attempt to make the diet more palatable and liberal so that it can be more widely applied. Part II of this report deals with observations on the metabolic alterations induced by the rice diet. The alterations in renal hemodynamics which are regularly found in patients with hypertensive disease are reviewed. With this material as background, the meta-

Prompt service

Supply your paper needs from the large and complete stock which Sexton carries in the branch closest to you. You're sure to get promptly whatever you need in paper napery, souffle cases, cups, containers of all kinds. It is an important detail of *our* service to be right there and on time with the little things that mean so much to *your* service.

Sexton

Quality Foods

JOHN SEXTON & CO., CHICAGO, 1951

bolic changes resulting from the rice diet are reported. Possible contraindications to use of the rice diet are pointed out.

Industrial Nutrition. The complexity of industrial feeding is stressed in this article. Among the more important factors to consider in determining the nutritional needs of industrial workers are: (a) the precise nature of the work carried out in the factory, (b) the appropriate number of meals for an individual doing a particular job, (c) timing of meals (shift work affects the conventional pattern of the daily diet), and (d) individual idiosyncrasy.

Estrogen and Calcium Metabolism. Animal studies indicate that during the period of sexual activity in the female or during the period of estrogen administration, the animal is in positive calcium balance and intestinal absorption of calcium increases. The effect of estrogens on calcium metabolism may explain the wide range of variation in calcium nutrition in individuals on widely different calcium intakes. It may be that low-calcium intakes do not necessarily result in serious consequences. In conditions of higher requirements, like puberty or pregnancy, a physiologic adaptation based on endocrine changes may take place which increases calcium absorption as well as calcium retention.

Glutamic Acid and Mental Functions. Articles in popular magazines have inferred that glutamic acid has special therapeutic properties for the treatment of various mental disorders. A thorough review of the literature is presented, with the conclusion that glutamic acid is likely to follow the same dreary career experienced by numerous other "brain foods" recommended in the past. The fact that glutamic acid is already contained in food and is synthesized by the organism has been overlooked by some clinicians.

Infant Foods. Modified cow's milk has become accepted as the most satisfactory food for the artificial feeding of infants. The author reviews the spectacular fall in mortality rates that paralleled the wider use of milk on a worldwide scale. In countries where adequate milk supplies are not available, milk must be provided either by increased production or by importation from countries with excess production, or substitutes for milk must be found. The particular problems of furnishing milk or milk substitutes to the children of Asia, Africa, and Central and South America are considered.

Antivitamin A. Described in this article is the substance regarded as the first antivitamin A. It is called the Z derivative. The discovery of the properties of the Z substance seems to offer a promising tool for the study of vitamin A, one of the least known though one of the earliest characterized vitamins.

PROCEEDINGS OF THE STAFF MEETINGS OF THE MAYO CLINIC

Vol. 25, June 21, 1950

* Use of milk to control vomiting caused by aureomycin. L. G. Bartholomew and D. R. Nichols.—p. 370.

Nausea Produced by Aureomycin. Aluminum hydroxide gels, milk, and various alkalies have been administered simultaneously with aureomycin in an attempt to alleviate the gastrointestinal irritation. However, until recently, little attention has been paid to the actual effect that these drugs and methods have on the absorption of aureomycin and its consequent therapeutic effectiveness. It has been found that the administration of aluminum hydroxide gels impairs the absorption of aureomycin. The therapeutic results obtained when aureomycin and milk have been administered simultaneously have been satisfactory.

PUBLIC HEALTH NURSING

Vol. 43, March, 1951

* Feeding the child with a cleft palate. I. Patterson.—p. 148.

Vol. 43, April, 1951

* The nurse can help with child feeding problems. M. E. Lowenberg.—p. 198.

Feeding the Child with a Cleft Palate. The discussion of feeding a child with a cleft palate is developed under the following headings: (a) before the cleft is repaired, (b) immediately following the operation, and (c) after the repair is completed. References are included.

The Nurse and Child Feeding Problems. Ways in which public health nurses can be of great help to mothers who want advice on child feeding problems are enumerated. The child's likes and dislikes in food are discussed also.

AMERICAN RESTAURANT MAGAZINE

Vol. 35, April, 1951

* More turnover from restaurant space.—p. 44.
* How to check up on your restaurant. J. B. O'Meara.—p. 48.

Tempt eye and appetite in spring with full-flavored vegetables. L. D. Freeman.—p. 50.

* Sandwiches that sell.—p. 59.

More Turnover from Restaurant Space. Two new restaurant operations have been created by a large Chicago department store from a dining area that was not producing revenue equal to the income it was felt such space should produce. One room offers a buffet lunch at a single price—95 cents—with a choice of desserts available at additional cost. The other room provides a choice of four luncheons ranging in price from 55 to 95 cents. Details of the service and the menus are described.

Check up on Your Restaurant. A detailed, two-page check list is given for inspection of a food service operation. It includes points on equipment, features of the building, and food service.

Successful Sandwiches. Over thirty recipes are given for a variety of sandwiches and sandwich spreads.

COLLEGE AND UNIVERSITY BUSINESS

Vol. 10, April, 1951

* Eats—a catering service for residence hall men at Duke. T. W. Ninah.—p. 39.
* A study of food costs and the nutritive content of foods served. G. M. Augustine, M. M. McKinley, and T. Dominy.—p. 46.

Dormitory Catering Service. A catering service for residence hall men at Duke University, Durham, North Carolina, has solved the problem of unrestricted bootlegging of food in the residence halls at night. The dining hall furnishes the equipment, supervision, food, and accounting system. The men's student government takes the responsibility for discipline and promotion and acts as the liaison with the student body. The procedure and the results are described.

Food Costs and Nutritive Content. A study was made of the relation between cost distribution and nutritive content of food at price levels prevailing during 1948. Data were obtained from a report of the food served at a residence hall for women at Iowa State College. Grain and grain products were found to be the most inexpensive source of protein, iron, thiamine, and niacin as well as calories. The milk, cream, and ice cream group was the most economical source of calcium and riboflavin. Fruits and vegetables were the most economical source of vitamin A and ascorbic acid. The costs of supplying the Recommended Dietary Allowances are reviewed.

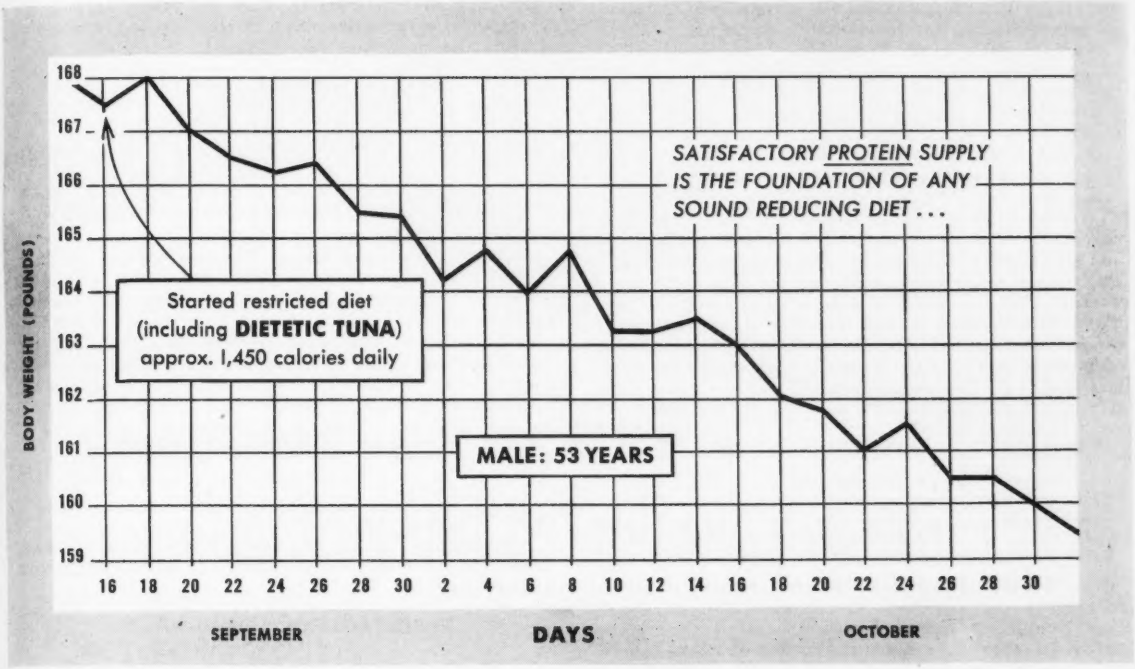
FOOD PROCESSING

Vol. 12, April, 1951

* Low-powered X-ray unit inspects canned foods at rate of 600 per minute.—p. 50.
* Vacuum used to cool rapidly leafy vegetables prior to shipment.—p. 52.

Dietetic Tuna—

ADDS NEW ZEST AND FLAVOR TO REDUCING DIETS



Adequate protein supply is the foundation of all sound reducing diets. Dietetic Tuna is high in protein—adaptable to many uses, both Hot and Cold.

In the processing, most of the oil has been removed to make this an ideal basic food for reducing diets.

In addition, DIETETIC TUNA is low in sodium, fat, and cholesterol, important factors in many diets.

DIETETIC TUNA may well be of unusual value in answering the question of patients on reducing or other special diets, "But, Doctor, what CAN I eat?"

A request on professional stationery will bring samples and bulletins.

TYPICAL average composition of drained contents

Total solids	30.6%
Protein	28.3%
Fat	0.75%
Cholesterol	.07%
Sodium	70 mg.%
Iodine	17 mcg.%
Fluorine	20 ppm
Riboflavin	116 mcg.%
Niacin	13.7 mg.%
Animal Protein Factor (B_{12})	12 mcg.%

(122 calories per 100 grams)

WELL PROPORTIONED combination of all essential amino acids (Values given as percent of protein)

Arginine	5.2
Histidine	5.7
Isoleucine	4.7
Leucine	7.0
Lysine	8.3
Methionine	2.8
Phenylalanine	3.5
Threonine	4.1
Tryptophan	1.1
Valine	5.2

ACCEPTED
COUNCIL ON FOODS AND NUTRITION
AMERICAN MEDICAL ASSOCIATION

VAN CAMP LABORATORIES
Division of Van Camp Sea Food Co., Inc.
Terminal Island, California

* Waterproof fabric is microporous; prevents excessive sweating and heating. —p. 53.

X-ray Unit Inspects Canned Foods. An X-ray inspection system using a tiny crystal known as a "semi-conductor" has been developed for (a) controlling and checking product level in containers; (b) detecting voids, cracks, and variation in a number of homogeneous materials; (c) checking for absence or misplacement of internal parts; and (d) spotting foreign particles in certain foods. A technical explanation of this X-ray system is included.

Vacuum Cools Leafy Vegetables. Vacuum-cooling of produce such as spinach, lettuce, and other leafy vegetables has been demonstrated as a means of rapidly cooling the produce prior to shipment. Damage to the quality of the products tested was practically nonexistent. This method of cooling is said to be extremely promising for prepackaged vegetables, since the produce can be rapidly cooled after it has been packed, sealed, and placed in perforated cartons.

Waterproof Fabric Is Microporous. A material has been developed which is recommended for use in coveralls and aprons for workers who are often in contact with water. The excessive perspiration and heating that result when workers wear conventional waterproof clothing is eliminated. This material is made from cotton (nylon or rayon can also be used) and is coated on one or both sides with a compound containing an oil resistant rubber. It has excellent flexibility, flex resistance, aging resistance, and abrasion resistance, and can be washed or dry cleaned.

HOSPITALS

Vol. 25, April, 1951

* Newer methods of diet therapy practice for student nurses. M. H. Edwards.—p. 121.

Vol. 25, May, 1951

* Economy through preparation of vegetables and salads. K. Hart.—p. 88

Diet Therapy Practice for Student Nurses. About a year ago the diet kitchen at Mountainside Hospital, Montclair, New Jersey, was eliminated. As a result, the student nurses who formerly assisted in the preparation of special diets are now assigned to a period of dietary practice in which they write diets and work with the dietitian on the medical and surgical wards. The new type of training is described.

Preparation of Quality Vegetables. The economies of careful purchasing and preparation of vegetables have been studied in the School of Home Economics, Michigan State College. Procedures which have been found to be successful in the preparation of vegetables and salads are described.

HOTEL MONTHLY

Vol. 59, May, 1951

Turkey for year-round service. R. E. Preschley.—p. 43.
* Menus.—p. 49.

Menus. Sample menus are illustrated from hotels in New Orleans and in Chicago. Coffee shop and room service menus are considered, and features of these services are described which make these particular menus distinctive.

INSTITUTIONS MAGAZINE

Vol. 28, April, 1951

* Food service design.—p. 18.
* Kitchen cutlery kept sharp for performance.—p. 40.
* Bacteria killing soaps sought for institutions.—p. 98.
Work sheet for kitchen equipment inspection and preventive maintenance services.—p. 110.

Food Service Design. This is the second in a series of articles on the Food Service Department of the New Men's Dining Hall at Alabama Polytechnic Institute. The guide for planning and designing food service facilities which was developed by a Food Administration Section committee of A.D.A. was used as the basis for the kitchen planning. These recommendations are listed and accompanied by a description of the adaptation for the residence hall.

Kitchen Cutlery. Instructions are given for the proper methods of sharpening kitchen knives. Types of equipment are also pictured.

Bacteria-Killing Soap. For years an effective antiseptic soap has been sought that is suitable not only for hospital personnel, but for food handlers and others as well. An antiseptic soap is described in this article—hexachlorophene. Its properties are discussed.

THE MODERN HOSPITAL

Vol. 76, April, 1951

Salads and sandwiches combine to make interesting main dishes. M. Eichelberger.—p. 108.

Vol. 76, May, 1951

* Beth Israel's new kitchen proves the wisdom of sound planning. L. M. Reiner.—p. 112.

Planning a New Kitchen. The new kitchen at Beth Israel Hospital in Boston was the result of the cooperative effort of the architect, the kitchen engineer, the hospital administrator, the dietitian, and later the kitchen equipment fabricator. The floor layouts of the kitchen and the dining room are illustrated, pictures are included, the equipment and service are explained, and mention is made of the kosher unit.

PRACTICAL HOME ECONOMICS

Vol. 29, May, 1951

* Beverages.—p. 236.
Nutrition high lights. C. B. Clayton,—p. 237.

Beverages. The article includes sections on varieties, nutritive value, buying, storage, preparation, and service of beverages.

RESTAURANT MANAGEMENT

Vol. 68, April, 1951

What a winning waitress wears. M. deG. Bryan.—p. 37.
* How a central commissary saves.—p. 38.
* Spring luncheon and dinner entrées featuring low cost foods.—p. 48.

How a Central Commissary Saves. Pictured and described are ways in which a centralized food storage and preparation headquarters serves a four-unit restaurant chain in Nashville. All four establishments are housed in small, inexpensive concrete buildings, accommodating customers at counters. There is limited but adequate personnel. Foods are prepared so as to save as much preparation as possible in each restaurant. This enables the restaurants to handle overflow crowds with speed and without confusion. Special attractions are featured weekly as drawing cards for customers. The location of the restaurants and the slashing of building costs are other important features in this cost-saving system.

Spring Luncheon and Dinner Entrées. This article lists twenty cheese, sixteen egg, and twenty-one poultry dishes that offer a range of choice at reasonable cost.

WHAT'S NEW IN HOME ECONOMICS

Vol. 15, March, 1951

Regional influence on meal planning.—p. 39.
* 10th anniversary of enriched bread.—p. 42.

Bread Enrichment. This resumé of the nutritional progress in the program of bread enrichment presents material on the following: (a) reasons for enriching white bread, (b) milestones in the enrichment program, (c) proof on nutritional improvement, (d) enrichment today and tomorrow, and (e) questions and answers on enriched bread.

NEW IDEA IN CRACKER SERVICE!

PREMIUM SALTINE CRACKERS*

in moistureproof cellophane packets....

"More people buy NABISCO'S Saltines than any other cracker"

CUT FOOD COST... BY CUTTING WASTE!

You get a real bonus in the new cellophane-wrapped PREMIUM Saltine Crackers! There is *no waste* caused by sogginess or staleness . . . *no waste* of "bottom-of-the-box" pieces and crumbs . . . *no waste of time in handling unused crackers and trying to keep them fresh.* Every PREMIUM Saltine packet you buy earns a profit!

BUILD PROFITS... BY SERVING QUALITY!

Your patrons know that PREMIUM Saltine Crackers in cellophane packets are *always* fresh, crisp and whole. They like the clean eye appeal of the package. And they'll enjoy having salty, flaky PREMIUM Saltine Crackers with soup and other dishes—or as a substitute for bread and rolls—even though it's a money-saver for you!

* *SNOWFLAKE SALTINE CRACKERS in the Pacific states*

SEND FOR THIS FREE BOOKLET packed with ideas on how to increase sales and cut food cost with NABISCO products including: *PREMIUM Saltine Crackers* • *TRISCUIT Wafers* • *RITZ Crackers* • *DANDY OYSTER Crackers* • *OREO Creme Sandwich*

National Biscuit Co., Dept. 27, 449 W. 14 St., New York 14, N. Y.
Please send your booklet "Around the clock with NABISCO."

Name..... Title.....
Organization.....
Address.....
City..... State.....

BAKED BY NABISCO — NABISCO — *NATIONAL BISCUIT COMPANY*

News Notes

A.D.A. Officers for 1951–52. The following will be the elected officers of The American Dietetic Association for the coming year:

President—Margaret A. Ohlson, Ph. D., Michigan State College, East Lansing
President-Elect — Beulah Hunzicker, Presbyterian Hospital, Chicago
Treasurer—LeVelle Wood, The Ohio State University, Columbus
Speaker-Elect of the House of Delegates—Lucille M. Refshauge, Hartford Hospital, Hartford, Connecticut
Delegates-at-Large
Elizabeth Perry, City Hospital, Cleveland
Bessie Brooks West, Kansas State College, Manhattan
Nominating Committee
Geographical Section I—Katherine W. Harris, Cornell University, Ithaca, New York
Geographical Section II—Maniza Moore, Veterans Administration, Atlanta
Geographical Section III—Elmira Blecha, University Hospital, Ann Arbor, Michigan
Geographical Section IV—Henrietta Becker, Barnes Hospital, St. Louis
Geographical Section V—Helen E. Walsh, California Department of Health, San Francisco

Dr. Daum Honored at Tea. On June 2 and 3, the Nutrition Staff of the State University of Iowa Hospital, Iowa City, honored Dr. Kate Daum with a series of social functions celebrating her twenty-five years of service. On June 2, a dinner was given, and on Sunday, June 3, both a breakfast and a tea. At the tea Dr. Daum was presented with a silver service. Former students, the University faculty, and the hospital staff were guests at the affairs.

Ardenia Chapman Receives Award. At a luncheon of the American Standards Association on May 28, Ardenia Chapman, Dean of the College of Home Economics, Drexel Institute of Technology, Philadelphia, was awarded a certificate for her service in standardization.

U.S.D.A. 1951 Awards. The U. S. Department of Agriculture recently announced the annual recipients of Distinguished and Superior Service Awards. In the field of nutrition, Distinguished Service Awards were given to the School Lunch Research Unit and the Vitamin A Research Unit, both of the Bureau of Human Nutrition and Home Economics, Beltsville, Maryland.

The School Lunch Research Unit received the Award "for notable research pertaining to the serving of nutritious, acceptable, and economical lunches, thus helping to promote the health and well-being of the nation's children." The Vitamin A Research Unit was selected "for pioneer research in vitamin A nutrition; for establishing vitamin A requirements of young adults; for demonstrating variation in availability to the body of carotenes from different foods; for increasing the specificity of the vitamin A bioassay."

Elsie H. Dawson, Bureau of Human Nutrition and Home Economics, Beltsville, was one of fifteen women to receive a Superior Service Award. Mrs. Dawson was selected to receive the award "for efficient and productive research on diverse and urgent wartime and postwar food problems; for fundamental developments in subjective and objective evaluation of food quality; and for coordinating, systematizing, and improving methods of evaluating palatability." Mrs. Dawson came to the Bureau in 1941. Her work during the war included problems in home food preservation and equipment. More recently she has conducted research on methods of judging palatability of foods.

Red Cross Appointments. Several recent appointments in the Food and Nutrition Service, American Red Cross, have been announced. The national staff is now as follows:

Pauline Murrah, Director, Washington, D. C.
Ellen C. Ruthman, Assistant National Director, Washington, D. C.
Jane Griswold, Assistant National Director, Washington, D. C.
Martha Smith Fry, Director, Eastern Area, Alexandria, Virginia
Betty Crummey, Assistant Director, Eastern Area, Alexandria, Virginia
Kathleen Kienstra, Midwestern Area Director, St. Louis
Frances Koeth, Southeastern Area Director, Atlanta.
Lorraine Beneke, Pacific Area Director, San Francisco

1951 Joseph Goldberger Award. On June 13 at the convention of the American Medical Association in Atlantic City, Dr. Fuller Albright, Associate Professor of Medicine, Harvard Medical School, received the Joseph Goldberger Award in clinical nutrition. Dr. Albright is best known for his studies of human metabolism as influenced by the endocrine glands. He has studied the parathyroid glands and their influence on the body's use of calcium. Most of his time has been devoted to studying mineral metabolism—the use in the body of mineral substances such as calcium, iron, and phosphorus.

A.M.A. Convention. This year's program of the American Medical Association's convention held in Atlantic City, June 11 to 15, featured a series of sessions on "Overweight, Nutrition, and Health." Topics included during the week's program were: the relation of overweight and the endocrines; diabetes, its control, and its relation to obesity; food fads; overweight and cardiovascular disease; dietary supplements; cholesterol; the obese child; and parenteral nutrition. Dietetic application of the topics discussed by the medical profession was also covered by five dietitians. Clara Zempel talked on "Dietetic Instruction for the Patient"; Bertha Burke spoke on "Dietetic Instruction for the Pregnant Woman"; Martha Trulson discussed "Dietetic Instruction for the Reducing Patient"; Ida Jean Kain presented a talk slanted toward doctors' wives on "Reducing Your Husband"; and Gertrude Austin presented "Helping the Patient to Follow a Diet."

An Exhibit Symposium on Overweight, Nutrition, and Health was also included in the Scientific Exhibits Section at the meeting and was planned to tie in with the program of speeches listed above. The Symposium included the following five exhibits: "Nutritional Research and Medical Problems" presented by the Department of Nutrition, Harvard School of Public Health; "Meals for the Low-Calorie Diet" presented by A.D.A.; "Influence of Overweight on Health and Disease" by the Metropolitan Life Insurance Company; "A Group Approach to Weight Control" by the U.S. Public Health Service; and "Overweight as a Contributing Cause of Diabetes and Its Complications," New England Deaconess Hospital, Boston.

Canadian Dietetic Association. The first Violet Ryley-Kathleen Jeffs Memorial Lecture highlighted the 17th annual convention of the Canadian Dietetic Association, held at Niagara Falls, Ontario, June 12 through 14. Dr. Lillian Gilbreth, time and motion study expert, discussed "Time Problems that Challenge Dietitians Today." Dr. Gilbreth was a particularly appropriate speaker because of Miss Ryley's interest in efficiency methods.

The program also included the following speeches:

"Methods in Teaching Nutrition" by Anne Y. Burns, Supervisor, Nutrition Division, Department of Health and Welfare, Ottawa
"Equipment" by Augusta Clawson, Director, Hannah Harrison School. Washington, D. C.
"Low-Cholesterol Diets" by Dr. William W. Priddle, Toronto Western Hospital, Toronto
"ACTH and Cortisone" by Dr. M. A. Ogryzlo and Jean Barbour, Sunnybrook Hospital, Department of Veterans Affairs, Leaside, Ontario

MEAT in the Dietary Treatment of Ulcerative Colitis...

Of utmost importance in treating ulcerative colitis is the support of the nutritional state of the patient with a diet providing generous amounts of protein, vitamins, minerals and calories but giving a minimum of intestinal residue.[1,2] Studies have shown that the most urgent nutritional need is for protein.[3] Other investigations have disclosed that patients with colitis display abnormally low serum levels for almost every vitamin.[4] Since most of these patients have anorexia, tempting food is essential for stimulating the appetite.

In particular, meat offers distinct advantages in maintaining the nutritional status and vigor of the colitis patient. Meat furnishes an abundance of protein, B complex vitamins and iron. Its protein contains all the indispensable amino acids in biologic proportions for growth and repair of tissues. Its B vitamins include thiamine, riboflavin, pyridoxine, niacin, and the recently discovered B_{12}. Being almost completely digestible, meat yields negligible intestinal residues which are non-irritating and non-stimulating to the intestinal musculature.

Another feature of meat in the diet of the patient with ulcerative colitis is its appetite-stimulating value for overcoming anorexia and promoting the digestive processes. In a widely used low-residue colitis diet,[2] providing from 60 to 80 Gm. of protein, 120 Gm. of meat and 10 Gm. of crisp bacon are included.

1. Mann, G. V., and Stare, F. J.: Nutritional Needs in Illness and Disease, J.A.M.A. *142*:409 (Feb. 11) 1950.

2. Barborka, C. J.: Treatment by Diet, ed. 5, Philadelphia, J. B. Lippincott Company, 1948, pp. 538-547.

3. Welsh, C. B.; Adams, M., and Wakefield, E. G.: Metabolic Studies on Chronic Ulcerative Colitis, J. Clin. Investigation *16*:161, 1937.

4. Bercovitz, Z., and Page, R. C.: Metabolic and Vitamin Studies in Chronic Ulcerative Colitis, Ann. Int. Med. *20*:239 and 254, 1944. Mackie, T. T.; Eddy, W. H., and Mills, M. A.: Vitamin Deficiencies in Gastro-Intestinal Disease, Ann. Int. Med. *14*:28, 1940.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute

Main Office, Chicago... Members Throughout the United States

"Writing Plain Talk to Sell Good Diets" by Amy Cowing, Educational Research Section, U.S.D.A. Extension Service, Washington, D. C.

"Recipe Development" by Ruth Laurance, Director of Menu Services, Cease Commissary Service, Inc., Dunkirk, New York

"Flavor Speaks for Quality" by Ernest C. Crocker, Arthur D. Little, Inc., Cambridge, Massachusetts

"Human Relations—A Vital Part of Management" by Jerome A. Gottschalk, Northwestern University, Chicago

NRA Convention. The 32nd National Restaurant Association Convention and Exposition was held in Chicago, May 7 through 11. Highlight of the convention was the food show, sponsored by Col. Paul P. Logan, Director of Research, National Restaurant Association, which featured the following: a demonstration of turkey braising; an exhibit on cooked dessert puddings; and a demonstration of infra-red cooking.

Included in the sectional meetings was a session on college food service. Topics discussed were: "Food Cost Control," "Good Food," and "Personnel."

World Health Assembly. The Fourth World Health Assembly was held at Geneva, during May and June. The new International Sanitary Regulations, designed to replace the former Sanitary Conventions, were adopted. These new WHO regulations, in preparation since 1947, will take effect in the middle of 1952. They are expected to straighten out contradictory health requirements in various countries, such as vaccination measures, and to resolve the health difficulties of travelers and transport companies. They also contain special provisions for the sanitary protection of the Mecca pilgrims.

Professor René Sand of Brussels received the Léon Bernard Prize at the Assembly. This award was created by international subscription in memory of Professor Léon Bernard of France. Consisting of a medal and a sum of 1000 Swiss francs, the prize is given for practical achievement in social medicine. Dr. Sand, a noted physician in the field of public health and social welfare, is the first to receive the award since 1939.

Spain, Japan, and the West German Federal Government were accepted as members of WHO at the Assembly, bringing membership to a total of 79 countries, including the associate membership of Southern Rhodesia.

Others matters discussed at the meeting were: the education, training, and recruitment of health personnel; a four-year plan for world health to start in 1952; and the expansion of WHO services through funds made available by the United Nations' Point IV program of Technical Assistance for Economic Development for this year.

Dr. Leonard A. Scheele, Surgeon-General, U.S. Public Health Service, was elected President of the Assembly.

Plentiful Foods. The following foods will be plentiful in July:

Protein foods

Chickens—broilers and fryers	Fish—fresh (local species) and frozen
Buttermilk	Nonfat dry milk solids
Cottage cheese	Peanut butter

Fruits and vegetables

Applesauce, canned	Plums
Lemons—fresh and processed products	Potatoes
Limes	Vegetables, locally grown (beets, cabbage, green peppers, snap beans, summer squash, sweet corn, tomatoes)
Oranges—fresh and processed products	
Peaches	

A.D.A. Members Win General Foods Awards. General Foods Corporation recently sponsored an Institution Contest for restaurant executives and employees. Entries were divided into two groups: the first competed in telling "what we do to reduce food costs without reducing quality." Entrants were described as "executives and back-of-the-house employees." A.D.A. members receiving prizes in this group were: Leta Clark Seal, Dietitian, Memorial Hospital, South Bend, Indiana, second prize; Joan Cardwell, Hialeah, Florida; Mrs. Leland R. Alexander, University of Georgia, Athens; and Verner Chitty, Assistant Director, School Cafeteria, Jacksonville, Florida.

KITCHEN WISE!

Built into all 26 Commercial Utensils
These 5 Important Kitchen Features

COMMERCIAL
FOR PROFESSIONAL COOKS

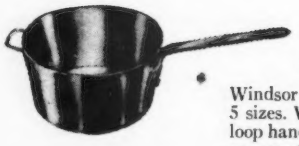
Extra thickness on bottom and top edges for extra long life.

Light weight aluminum for easy handling.

Strong riveted handles for safe handling.

Free of crevices and seams that collect food and dirt.

Superior finish. Cleans easily and contributes to sanitary appearance for kitchen.



ALUMINUM

Windsor sauce pans in 5 sizes. With or without loop handle. Tapered for easy nesting.

ALUMINUM

Stock pots from 6 to 80 quarts. Narrow and standard diameters and medium to heavy weights. Model shown has optional faucet and strainer for broths.

ALUMINUM

Bain Marie sets for storing foods. 1 to 36 quarts. Acid and stain resistant finish.

Harlow C. Stahl Co.
1367 E. Jefferson Ave., Detroit

On the subject of "meat" in the diet

one recipe

MEAT PIE...
Gerber's Style

1 can Gerber's Junior (Chopped) Beef, Veal or Liver

1/2 cup mashed potatoes (add seasoning if diet permits)

Butter a small, individual casserole. Place 1/2 of the mashed potatoes in bottom of the casserole. Top with the chopped meat. Spoon remaining half of the mashed potatoes in mounds around the edge of the casserole, leaving a little of the meat showing. Bake in a moderate oven (375°) until top is lightly browned.

is worth a thousand words!

You can frequently get patients to eat the Strained or Junior Meats they need by giving them *recipes* to follow.

For example, the recipe shown here will add approximately 23 grams of non-hydrolized meat proteins to an older patient's diet and do it in an appetizing, taste-satisfying way. Many such recipes are in Gerber's 44-page "Special Diet" Recipe Book.

Gerber's Strained and Junior Meats are *lean meats*, particularly easy to digest because they are free from coarse, connective tissues and low in fat content. They are prepared from high-quality Armour cuts, cooked to retain true-meat flavor and high nutritional values. With all this, they cost *less* than meats cooked and scraped at home.

FREE for use with patients. Gerber's "Special Diet Recipes" booklet offers recipes for Bland, Soft, Mechanically Soft and Liquid Diets. For your copies, write on your letterhead to Dept. 237-1 Fremont, Mich.

ARMOUR

Gerber's BABY FOODS

Meats, Vegetables, Fruits, Desserts—over 50 Varieties—
Strained and Junior

The second group, described as "executives and front-of-the-house employees," submitted entries concerning "what we do to make customers come back to our eating place." First prize in this contest was awarded to Genevieve Gales Lange, The Arc, Glenview, Illinois.

Army on Television. The Women's Medical Specialist Corps has distributed to television stations throughout the country thirty, 1-min. television "clips," portraying the activities of dietitians, occupational therapists, and physical therapists in the Army. The series is designed to interest qualified applicants by presenting and emphasizing opportunities available in these three professional groups.

Jane Thurtle. Word has been received in the A.D.A. office of the death last December of Jane Thurtle. Miss Thurtle, an A.D.A. member since 1944, had been employed by St. Joseph's Memorial Hospital, Lewiston, Idaho; Alton Memorial Hospital, Alton, Illinois; and the VA Hospital at Kecoughtan, Virginia.

New Feature of Hospitals Directory. "Management Guides" is the title of a new section appearing in the June directory issue of *Hospitals*. This section itemizes essential operating information for the various departments in a hospital. As related to the dietary department, it offers facts on food portion sizes, average raw food costs, minimum dishwashing standards, and computing the meal census.

U.S.D.A. Publications. The Bureau of Human Nutrition and Home Economics, U.S.D.A., has recently issued a booklet titled *Food Purchasing Guide for Group Feeding* by Rosalind C. Lifquist and Edith B. Tate. The booklet consists of tables reprinted from Agriculture Handbook No. 16, *Planning Food for Institutions*. Topics covered include: various types of food; meat grades and cuts; yields of vegetables and fruits after cooking; counts per box of fruits; shrinkages in dressing and eviscerating poultry, and grades of eggs. This *Guide* is primarily designed to help persons concerned with estimating quantities and units of food to buy for group-feeding programs. It can be purchased from the Government Printing Office, Washington 25, for 25 cents.

Another recent release of the BHNHE is its Commodity Survey No. 11, titled *Meat: Variations in Consumption and Interrelationships with Other Foods*. Prepared by Faith Clark and Beatrice Vaccara, it is part of the series of reports analyzing the 1948 surveys of family food consumption by the Bureau. Unlike previous reports in the series, this deals, not with effects of different factors, e.g., size and income of families on *average* consumption, but in variations on the average, to demonstrate that even with the control of the most measurable factors, there are still wide differences in food consumption. Other reports to follow will be along the same lines. The analysis will be of value chiefly to market analysts, home economists, and government officials. The report indicates that although the average meat consumption by urban families in the spring of 1948 was 2.42 lb. per person per week, a fifth of the families used less than 1½ lb. Almost one-tenth, on the other hand, used 4½ lb. or more per person. In general, families which used relatively large amounts of meat also used larger quantities of potatoes and smaller amounts of poultry, fish, milk, and certain vegetables and fruits. They also had superior diets when compared with families using relatively small amounts of meat.

Table of Food Composition for the Armed Forces, also prepared by the BHNHE, gives information on the food composition of ration items and provides a reference aid for menu planners and others responsible for feeding the armed forces. Starting with a limited table of food values used by the armed forces in World War II, the nutritionists have constructed a new table, using unpublished analyses from the QM Food and Container Institute and the Bureau's collection of data from research laboratories throughout the world. The table gives nutrients in some 800 items, including such special products as canned spreads for bread, powdered dehydrated apricots, and crackers with fortified yeast. Amounts of eleven different nutrients in 1-lb. quantities are given for each food. Foods are arranged according to the sixteen groups regularly used by the armed forces in their meal planning. For some items, specification numbers are also cited.

Another new booklet is the U.S.D.A. Circular No. 859, *Evaluating School Lunches and Nutritional Status of Children*, prepared in cooperation with the Federal Security Agency. Authors of the report are: Clarence Velat and Olaf Mickelsen, U.S. Public Health Service, and Milicent L. Hathaway, Sadye F. Adelson, Frieda L. Meyer, and Betty B. Peterkin of the Bureau of Human Nutrition and Home Economics. The plan and findings of a pilot study designed to correlate and evaluate clinical, biochemical, and dietary methods in regard to nutritional status and diet of children with and without a school lunch are reported. Two schools in Maryland were involved in the investigation. In one, a lunch had been served for a number of years. In the other, no lunch was available the first year of the study, but during the second year, a lunch program was inaugurated. The study showed that children in the "lunch" school received higher percentage of milk products and vegetables. About 60 per cent had at least one serving of green or yellow vegetables a day, while less than 15 per cent of the "non-lunch" children received such food. Each "lunch" child averaged at least 1 pt. milk daily, while in the other group only 75 per cent of the children drank this much milk. These figures also take into consideration morning and evening meals. Higher ascorbic acid and vitamin A intake was also found in the diets of children in the "lunch" school. During the second year when the lunch program was introduced

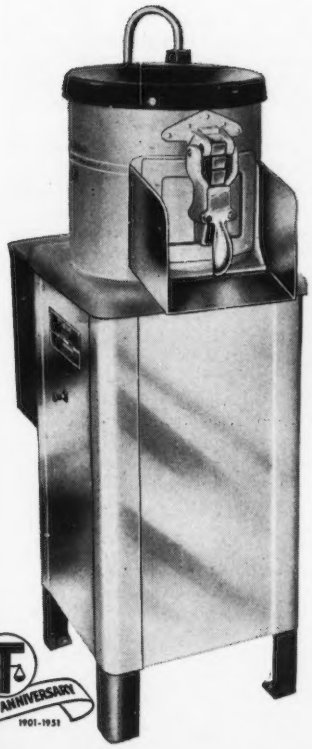
CELLU FLOURS
for Allergy Diets

WHEAT-FREE EGG-FREE MILK-FREE

For best results specify CELLU Allergy Products for your diets. They're carefully guarded against contaminating offending allergens. They offer tasty variety—Barley, Corn, Rice, Potato, Rye, Soy Bean and others.

SEND FOR FREE BOOKLET "ALLERGY DIETS"

Purposefully Prepared
CELLU Dietary Foods
CHICAGO DIETETIC SUPPLY HOUSE Inc.
1750 West Van Buren Street Chicago 12, Illinois



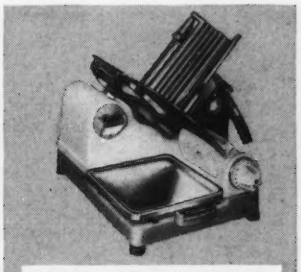
NEW TOLEDO PEELERS

- **CLEAN-LINED BEAUTY!**
- **NEW EASE IN OPERATION!**
- **EFFICIENT "DOUBLE ACTION" PEELING!**

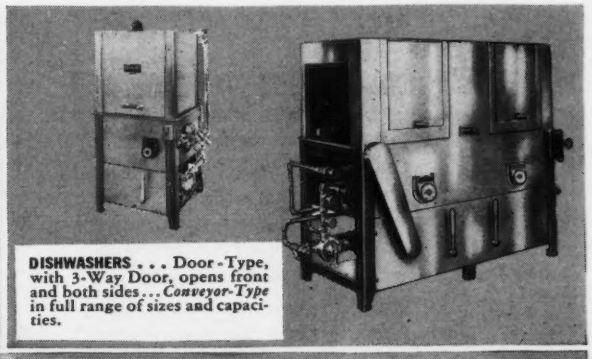
This handsome new TOLEDO-Sterling Peeler for potatoes and vegetables does a cleaner, faster job . . . with a minimum of waste. New beauty in two-tone grey with maroon trim. Improved peeler trap. Maximum adaptability to your installation needs. Performance-proved efficiency of Carborundum surfaces on *both* the cylinder wall and disc. Choice of capacities—15, 30, 45 and 60 lb.—each peeling a full charge in 1 to 1¼ minutes. Send for bulletin SP-100b.

50th ANNIVERSARY 1901-1951

CHOPPERS. New speed ..gravity feed . . . clean modern beauty. Choice of three sizes.



SLICERS... with exclusive Toledo Quick-Weigh Estimator . . . illuminated platter . . . greatest ease of operation and cleaning.



DISHWASHERS . . . Door-Type, with 3-Way Door, opens front and both sides . . . *Conveyor-Type* in full range of sizes and capacities.

WEIGH IT IN. Toledo Receiving Scales ideal for weighing-in all produce and meats . . . Portable Scale Model 1800.

WEIGH IT OUT! Toledo Speedweigh over-and-under scales provide speedy, accurate weighing of portions.

Guard your food costs!
WEIGH IN WEIGH OUT

SEND FOR BULLETINS

Check your needs . . . send for latest bulletins on these modern machines for your requirements today—

TOLEDO KITCHEN MACHINES

- ☐ Peelers for potatoes and vegetables
- ☐ Door-Type Dishwashing Machines
- ☐ Conveyor Dishwashing Machines
- ☐ Slicer with Quick-Weigh Estimator
- ☐ "Gravity-Feed" Choppers
- ☐ Power Meat Saws
- ☐ Steak Machines
- ☐ Speedweigh Portion Scales
- ☐ Receiving Scales
- ☐ Ingredient Scales

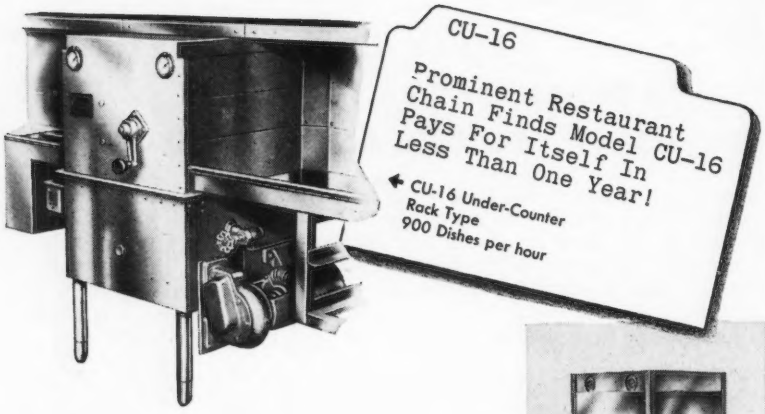
Write to . . . **TOLEDO SCALE COMPANY**
Toledo 1, Ohio

Today it's **TOLEDO** *... all the way!*

Here's proof YOU can make big savings with

COLT AUTOSAN

Dishwashers!

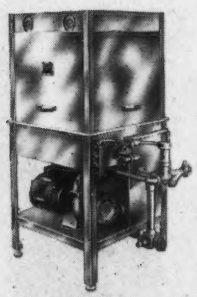

CU-16
Prominent Restaurant Chain Finds Model CU-16 Pays For Itself In Less Than One Year!
CU-16 Under-Counter Rack Type
900 Dishes per hour

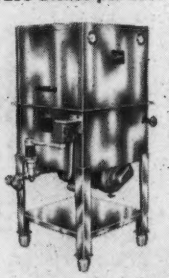
Concerned about high operating costs? Read how one prominent restaurant chain* cut them with Colt *Autosan* Dishwashers.

This leading chain of small restaurants found that by installing the Colt Autosan Model CU-16, they saved enough in wages formerly paid for hand washing to offset the installation cost *in less then one year.*

And now these *Autosans* are going right ahead rolling up the same savings, in year after year of trouble-free service.

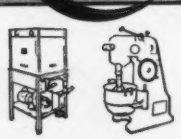
No matter how big, or how small, *your* kitchen is, there's a Colt Autosan that can make simflar big savings for you. Contact your dealer now—or write for full information on the complete line of Colt *Autosan* Dish-washing, Sanitizing and Drying Machines and Food Mixers—all expertly engineered, built to last. Colt's Manufacturing Company, Hartford 15, Connecticut.


R-1A Rack Type
1250 Dishes per hour


R-16A Rack Type
900 Dishes per hour

*Name on request

COLT AUTOSAN



DISHWASHING, SANITIZING
DRYING and MIXING MACHINES

in the second school, the diets of this group approached those in the first school. The report may be obtained from the Superintendent of Documents, Washington 25, D.C., for 25 cents a copy.

National Research Council Publications. *Sanitary Milk and Ice Cream Legislation in the United States* has recently been released by the National Research Council as its Bulletin No. 121. The report was prepared by A. C. Dahlberg and H. S. Adams in collaboration with the Committee on Milk Production, Distribution, and Quality, and was made by the National Research Council under a contract with the U.S.D.A. It is a report on the first phase of a study of regulations in relation to milk quality; it is made up largely of comprehensive tabulations of requirements in various states in regard to milk and a summary of findings. This bulletin is available from the Information Branch, Production and Marketing Administration, U.S. D.A., Washington 25, D. C.

Another new pamphlet of the National Research Council is *The Problem of Heat Injury to Dietary Protein*, No. 131 in its Reprint and Circular Series. This pamphlet, issued by the Committee on Protein Foods, Food and Nutrition Board, is concerned with the nutritional importance of damage to essential enzymes and amino acids, caused by autoclaving and other methods of heating. High temperatures and pressures, the authors state, in association with reducing sugars, tend to impair enzymatic action by the formation of amino-acid-sugar complexes which resist this action to a high degree. This in turn renders tissue protein synthesis less effectual and causes the protein to deteriorate. They state, however, that "browning" is not a cause of this injury but merely an associated change, which finding is contrary to previous theories. Recent discovery of the quantitative amino acid interrelationship required for the efficient metabolism of food proteins and the establishment of amino acid requirements, now makes necessary the elimination of the high waste of protein prevalent today through heating processes.

News of State Associations

Arkansas Dietetic Association. Officers of the Arkansas Dietetic Association for 1951–52 are: President, Christina D. Spear, State Board of Health, Little Rock; President-Elect, Isabel Hamilton, VA Hospital, Little Rock; Secretary, Mary Toland, Consultant Dietitian, State Board of Health, Little Rock; and Treasurer, Hope Greer.

California Dietetic Association. Dr. John Gofman, Research Associate in Medical Physics, Donner Laboratory, University of California, was guest speaker at the April meeting of the *Bay Section*. Dr. Gofman spoke on the problem of atherosclerosis and its relationship to the low-fat, low-cholesterol diet. Emphasizing the seriousness of this

4 more awards

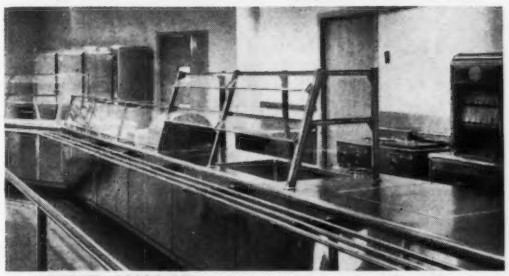
BLICKMAN INSTALLATIONS WIN TOP HONORS

IN INSTITUTIONS ANNUAL FOOD SERVICE CONTEST

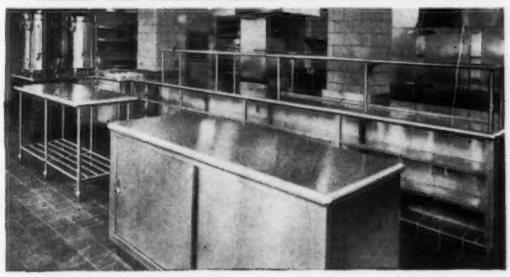
★ Mutual Life Insurance Company, N. Y.
★ Wilson Memorial Hospital
★ Baylor Hospital
★ Statler Hall, Cornell University

FIRST AWARD — *Mutual Life Insurance Company, New York* — Over 1500 meals daily are served to personnel in this superb new building. Illustration shows three-line stainless steel cafeteria counters, employees' cafeteria.

MERIT AWARD — *Wilson Memorial Hosp., Johnson City, N. Y.* — Stainless steel equipment, main kitchen.



MERIT AWARD — *Baylor Hospital, Dallas, Texas* — stainless steel cafeteria counter with round corner base.



HONOR AWARD — *Statler Hall, Cornell University, Ithaca, N. Y.* — Stainless steel equipment, main kitchen.

● 14 awards in 4 years! That's the record of Blickman-Built installations in the annual "Institutions" Food Service Contest. While these awards are gratifying to both the owners and S. Blickman, Inc. — they have much greater significance. Through these contests, the entire food service industry is made aware of new standards of efficiency. Such standards govern the basic design of Blickman-Built stainless steel equipment. All-welded structures assure strength and durability... seamless, crevice free surfaces and rounded corners are important aids to sanitation, and reduce cleaning time. If you, too, are concerned with efficient operation and *permanence*, then choose Blickman-Built food service equipment.

Make These Contest Criteria Your Buying Guide

1. **Selection of Equipment** — functionally suitable for best results.
2. **Efficient Placement of Equipment** — to save time and motion.
3. **Economic Soundness** — ratio of operating costs to value obtained.
4. **Sanitation and Safety** — furthered by good design and fabrication.
5. **Special Features** — includes the element of attractive appearance.

Send for illustrated folder describing Blickman-Built food service equipment, available in single units or complete installations.

S. Blickman, Inc., 4007 Gregory Ave., Weehawken, N. J.
New England Branch: 845 Park Sq. Bldg., Boston 16, Mass.

Blickman-Built
FOOD SERVICE EQUIPMENT

COFFEE URNS | STEAM TABLES | FOOD CONVEYORS | SINKS | WORK TABLES

Try this SPAGHETTI SALAD
So easy to make—So Economical

Featuring *Continental's* distinctive Thousand Island Dressing

This is economy in a Sunday dress. Spaghetti Salad that is different, hearty, and delicious. And you'll like the extra richness, the exquisite flavor of Continental's Thousand Island Dressing.

Salad shown contains Continental Spaghetti, chopped celery, chopped onions, sweet pickle relish, chopped parsley, chopped pimento and Continental Thousand Island Dressing.

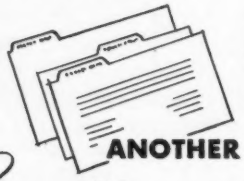
Easy to make! Just chill cooked spaghetti. Mix all other ingredients together; then add spaghetti. Chill and serve on leaf lettuce.

Economical! Each 4 oz. serving costs only about 2½c. Write for the complete recipe today.

More Value for You!

Continental Menu Products are manufactured on our own premises and delivered by the same salesman who delivers Continental Coffee. Thus, our overhead and delivery costs are cut to the bone, assuring you best value in every product in the Continental "76" line.

CONTINENTAL THOUSAND ISLAND DRESSING
Rich, heavy-bodied, flavorful. Blended with chili sauce and sweet relish. Packed in wide-mouth gallon jars.



Write Miss Constance Conover, our Quantity Cookery Expert, for a complete assortment of recipe cards covering salads and many other dishes. No cost or obligation!

ANOTHER OF...

Continental's "76"

"FLAVOR-TESTED" MENU PRODUCTS

CONTINENTAL COFFEE COMPANY

CHICAGO · TOLEDO · BROOKLYN

Producers of Continental Coffee America's Leading Coffee for Restaurants, Hotels, and Institutions

medical problem, he pointed out that three times as many deaths occur from this disease as from cancer. He also discussed his laboratory work in estimating cholesterol and fat, using ultracentrifugal analysis. Virginia Haynes Dobbin and Clara-Beth Young Bond, who have been directing the Donner diet table at Cowell Memorial Hospital, then discussed their experiences in preparing, planning, and developing recipes for the special diets required there.

The April program of the *Los Angeles Section* included the following three papers: "Bacteriologic Aspects of Eating Raw Foods" by Dr. M. John Pickett, Professor of Bacteriology, U.C.L.A.; "Certified Milk vs. Raw Milk" by Dr. Charles W. Bonynge, Professor of Preventive Medicine, U.S.C.; and "The Effect of Raw Foods on Human Metabolism" by Dr. Margaret Moorehouse, Assistant Professor of Biochemistry, U.S.C.

The *San Diego Section* in March heard Edwin Watkins, Sanitarian, City Division of Food Sanitation, City Health Department, discuss sanitation in food handling. He showed a Walt Disney film, "What Is Disease?" which depicted in cartoons the importance of sanitation in prevention of disease. At the April meeting of the *San Diego Section*, the following officers were elected: Chairman, Christmas Idle, and Secretary-Treasurer, Margaret Susman.

Colorado Dietetic Association. The spring meeting of the Colorado Dietetic Association was held in Pueblo, May 5. The program included a talk by Melvin L. Hayne, Clinical Psychologist, Colorado State Hospital, on "The Role of the Clinical Psychologist in a Mental Institution," and a speech on "Radiation and Radiation Sickness" by Dr. W. Kemp Absher, physician and radiologist of Pueblo. Dr. Absher told of the dangers of Roentgen rays, the effects of atomic radiation, and the use of radioactive isotopes in medicine and research. Cora E. Kusner, Chief Dietitian, Colorado State Hospital, demonstrated new types of dietary equipment, and members of the hospital dietary staff conducted a tour of four of the kitchens. After dinner, Pearl I. Kauffmann, Dietitian, Colorado State Hospital, showed colored slides and spoke of her work as dietitian and nutritionist in Puerto Rico. Her collection included pictures of tropical fruits, flowers, and vegetables, as well as examples of malnutrition found in the people.

Colorado dietitians took part in a career conference at Colorado A. & M. College on January 20, in the session for home economics students. Cora E. Kusner, Chief Dietitian, Colorado State Hospital, spoke on job opportunities, personal requirements, and the satisfaction which may be derived from dietetics.

The Colorado Dietetic Association has established a loan fund for graduates of a Colorado college or university.

New officers elected for 1951–52 are: President-Elect, Dr. Elizabeth Dyar, Colorado A. & M. College, Fort Collins; and Secretary, Elsie Hooker, Denver.

Grape Juice

the iron-rich* health drink children go for!

FOR a *welcome change* when appetites are finicky

FOR *easy digestion* when other juices are not tolerated

FOR the *quick energy* pick-up of easily utilized carbohydrate

FOR copper and B_{12}— important in potentiating the blood-building iron content—and as a valuable source of calcium, phosphorus, B_1 and B_2

Because It Tastes So Good

It is of particular value when a child is convalescing, run down, or a picky eater with decided food preferences.

★0.8 mg. Fe per 8 oz. glass. U. S. Dept. Agriculture Handbook #8, 1950, p. 29.

NEW!

Welch's Frozen Concentrated Grape Juice is now ENRICHED WITH VITAMIN C

An 8 oz. glass of the reconstituted juice contains 30 mg., more than the child's minimum daily requirement.

Recommend mixing with milk instead of water . . . the new PURPLE COW drink taken eagerly by children who dislike milk.

Welch's

FOR MORE THAN 80 YEARS!

Welch Grape Juice Company, Westfield, N.Y.

© KAGRAN CORP.

Other officers who will remain in office are: President, Virginia Beal, Child Research Council, Denver; and Treasurer, Josephine Faunce, St. Luke's Hospital, Denver.

Connecticut Dietetic Association. The *Northern Connecticut Dietetic Association* met on May 3 at the University of Connecticut, Storrs, to hear a talk on modern educational trends. The following officers were elected for the coming year: President, Ruth Ann Carson; President-Elect, Ruth Hauser Brock; and Secretary-Treasurer, Nancy Colburn.

Georgia Dietetic Association. The spring meeting of the Georgia Dietetic Association was held in Atlanta, May 11. The program included the following speeches:

"The Civil Defense Program" by Maj. Gen. Ernest Vandiver, Jr., Adjutant General, Georgia Department of Defense

"A Report from the White House Conference" by Mrs. Charles D. Center, Assistant Director, Health Education Division, Georgia Department of Health

"Merchandising of Food" by Anne Kilpatrick, Manager, Franklin Simon Tearoom, Atlanta

"The Work of the Food and Drug Administration with Respect to Food Adulteration" by J. J. McManus, Chief, Atlanta District, Food and Drug Administration

serve finer foods...
FASTER
with MARKET FORGE
STEAM COOKERS
You can serve hot, fresh, appetizing meals in *less* time and with *less* work when you cook with Market Forge Steam Cookers. Food is *tastier.* Cooking is *faster.* Waste and shrinkage is cut. Steam cooking saves you time and labor because it eliminates washing heavy pots and pans. There is never any burned food.
Cook the kind of food that *keeps customers coming back.* Cook with Market Forge Steam Cookers. Get these advantages:
• One-piece sanitary shelves.
• Removable inner door.
• Complete stainless steel interior including the door.
• Seamless round-cornered baskets.
• Insulated door front.
These major advances in steam cooking were *originated* by Market Forge, one of the oldest and largest companies manufacturing steam cookers today. Always look to Market Forge for the *first* in modern improvement and superiority.
Send for big Free Manual on Steam Cooking Today. Write Dept. K.
Model 3M Direct Connected
Model 2M—G Gas Fired
Market Forge Company
EVERETT 49, MASSACHUSETTS

Illinois Dietetic Association. The *Chicago Dietetic Association's* May meeting was held May 16 at the University of Chicago. Ella Eck, Executive Dietitian, University of Chicago Clinics, acted as hostess while the members toured the recently installed kitchen and cafeteria at the Clinics. Later she discussed some of the problems involved in planning this installation. The National Restaurant Association's film "America's Heritage of Hospitality" also was shown.

Massachusetts Dietetic Association. In October, Diana Abbott, Lecturer on Nutrition, Simmons College, was interviewed by Christine Evans over Station WHDH. The subject was "Advice on Dietetic Problems to Be Used for the Home." Later in the year, while Miss Evans was a patient at the Boston Lying-In Hospital, she interviewed Geneva L. Marble, Head Dietitian, on "Careers for Women in Dieteties." This program was unique in that it was broadcast from the hospital bedside.

Beula B. Marble was appointed by Governor Dever to be a member of the Massachusetts Committee of the Mid-century White House Conference on Children and Youth. She has been chairman of the Massachusetts Dietetic Association Committee to follow through on the recommendations of the Washington conference.

In line with the present international emergency, members have attended state meetings and supported activities toward civil defense. Lillian Myers Reiner, President, Massachusetts Dietetic Association, is Co-Chairman of the Sub-Committee on Emergency Feeding for the Committee on Emergency Stations and Hospitals. She was appointed by the Boston Health Service Division, Department of Civil Defense.

New Hampshire Dietetic Association. The March meeting of the New Hampshire Dietetic Association was held in Concord on March 6. The guest speaker was Perley Fitts, Commissioner, State Department of Agriculture, who talked on "The Dietitian's Role in Civil Defense."

In May, the Association celebrated the anniversary of its founding at a meeting in Wolfeboro on May 9. Featured speaker at this meeting was Lucille Refshauge, Hartford Hospital, Hartford, Connecticut.

The following officers have been elected for the coming year: President, Sarah Thames, University of New Hampshire, Durham; President-Elect, Dorothea Bartlett, Mary Hitchcock Hospital, Hanover; Vice-President, Alice Van Dyke, St. Paul's School, Concord; and Secretary, Ruth Shapleigh, Memorial Hospital, Concord.

New Jersey Dietetic Association. The first two of a series of workshops for dietitians in various areas of the state have been presented by the New Jersey Dietetic Association. The first was held in Newark on March 29. The principal speaker was Joseph Kelley, Personnel Department, General Foods

PROTEIN VALUE OF EGGS

Eggs supply about the best balanced protein commercially available. They provide what might be called *standard* protein.(1)

APPROXIMATE PERCENTAGE OF AMINO ACIDS IN EGG PROTEINS(1)

(Calculated to 16% of Nitrogen)

Arginine	7.0%
Histidine	2.4%
Lysine	7.5%
Tyrosine	4.5%
Tryptophan	1.6%
Phenylalanine	6.3%
Cystine	2.1%
Methionine	4.0%
Threonine	4.9%
Leucine	9.2%
Isoleucine	7.7%
Valine	7.8%

EACH new horizon of nutritional knowledge more clearly reveals the true significance of eggs as suppliers of food values that contribute to better control of disease, greater vigor and longer life.

With an average per capita consumption of 390 (up 30% from 1935-39) eggs are providing greater percentages of total nutrients to modern day diets than ever before.(2)

For instance, *protein* of particularly high quality and biological completeness (see chart above) is one of the chief virtues of this universally popular foodstuff. Properly prepared whole egg, at low levels of intake, may approximate a biological value of 100!(3)

Eggs rightfully serve, then, as one of the most wholesome, appetizing, economical and conveniently available sources of this vital nutrient.

Too, in addition to proteins of high biological efficiency, eggs are sources of important vitamins such as those of the B-Complex, A, D, E, Biotin, Pantothenic Acid and Choline . . . as well as Iron, Phosphorus, Calcium and Copper.

(1) . . Block, R. J. and Bolling, D.—The Amino Acid Composition of Proteins and Foods Second Edition, C. C. Thomas, Springfield, Ill. 1950.

(2) . . "Consumption of Food in the U.S."—Pgs. 131-132 U.S.D.A. BAE August, 1949.

(3) . . Nutritional Data, Heinz Nutritional Research Division Mellon Institute, 1949.

ACCEPTED COUNCIL ON FOODS AND NUTRITION AMERICAN MEDICAL ASSOCIATION

This seal signifies that all statements herein pertaining to nutrition have been found acceptable by the Council on Foods and Nutrition of the American Medical Association.

POULTRY AND EGG NATIONAL BOARD

CHICAGO 6, ILLINOIS

A NON-PROFIT ORGANIZATION

Devoted to Research and Education Work in Behalf of the Poultry Industry

Corporation. The group studied the problem of developing a dietary department, working out organizational plans, writing job specifications, and establishing policies.

The same general topics were discussed at the second workshop on April 19 in New Brunswick, for which Mr. Kelley again served as instructor and featured speaker. In addition, Martha Smith Fry, Director, Food and Nutrition Service, Eastern Area, American Red Cross, spoke on "You, Red Cross, and Civil Defense." Catherine Pennington, Institution Food Services, General Foods Corporation, talked on "Good Food to Fit the Budget." Guests at this workshop were students from the Home Economics Department of New Jersey College for Women.

North Carolina Dietetic Association. The spring meeting of the North Carolina Dietetic Association was held on April 27, at which reports of the officers and committee chairmen were heard. Participation in career day programs at Salem College, Woman's College of the University of North Carolina, and in the high school in Charlotte was reported. It was announced that the North Carolina Association is a member of the State Planning Board for Civil Defense, for which it is helping develop emergency menus, plans for instructors' courses in mass feeding, and lists of trained persons not now employed. Lillian Storms Coover, A.D.A. President, represented the national Association at a joint luncheon of the Virginias-Carolinas Dietetic Associations and discussed activities on the national level.

The professional program was integrated with that of the Carolinas-Virginias Hospital Conference. The Reverend Robert A. Lapsley, Jr., as a former hospital patient, stressed the importance of serving hot foods hot and cold foods cold. Dr. Mary deGarmo Bryan discussed future developments in food service, emphasizing decentralized service, the use of electronic cooking, and preparation of food in small quantities. She suggested that hospital meal service might be "staggered," so that kitchen employees might be moved from one pantry to another.

Evelyn Cox was elected President-Elect of the North Carolina Association to complete the term of office of Jane Umstead, who resigned.

Pennsylvania Dietetic Association. The *Pittsburgh Dietetic Association* has also cooperated with the local diabetes association, having presented at a joint meeting in December a talk by Marion Nichols Scarborough, Diabetes Branch, U.S. Public Health Service. Others who have appeared this year before the Pittsburgh Association are: Dr. Gerald Cox, Director, Dental Research, University of Pittsburgh; Dr. Stuart Stevenson, Research Professor of Pediatrics, University of Pittsburgh School of Medicine; and Dr. Joseph Gilmartin, Member, Commission of Child Health, Pennsylvania Medical Society. Other activities of the group include: affiliation with the Pittsburgh Film Council, a group organized to promote the use of motion pictures for educational purposes; participation in career conferences of the University of Pittsburgh and the Home Economists in Business; and assistance in compiling a guide for "Budgeting Limited Family Incomes in Pittsburgh and Allegheny County."

South Carolina Dietetic Association. The South Carolina Dietetic Association sponsored a Dietetic Institute in Columbia, April 13, for persons in charge of dietary departments in hospitals, nursing homes, and children's homes. Margaret Freeman, Consultant Dietitian, State Board of Health, and Anna Watson, President, South Carolina Dietetic Association, served as chairmen.

The program included: a talk by Charlotte Mobley, Home Service Director, Duke Power Company, Charlotte, North Carolina, on "The Use and Care of Equipment"; a discussion of "Personnel Management" by Dr. Donald E. Lundberg, Head, Restaurant and Hotel Management Department, Florida State University, Tallahassee; and a tour of the State Hospital.

The spring meeting of the South Carolina Dietetic Association was held the following day. Roy Pearce, Pearce-Young-Angel Wholesale Company, spoke on "The Current Trends in the Food Business," and Dr. Donald Lundberg discussed "Leadership and Management."

FAST TOAST SERVICE IS EASY
with a *Savory*

YOU'RE ALWAYS SURE **of faster service with a Savory. Because Savory keeps pace with your needs. You are never bogged down by slow toasting... it keeps toast service ahead of toast demands. The continuously moving conveyor makes the toaster easy to load – and it unloads itself automatically. There's no waiting, no confusion, no toast bottlenecks, no matter how heavy your demand.**

Lowest Operating Cost

A Savory has the lowest operating cost in the commercial toasting field. Gas models operate on any type of gas, for as little as ¾ of a cent per hour. All-electric units have low connected load and comparably low operating costs.

Savory **EQUIPMENT, INCORPORATED**
120 Pacific Street, Newark 5, N. J.
Sold by Leading Dealers Everywhere

CHILD HEALTH *improved with*

DAIRY FOODS

Doubts are often expressed that children will consume a liberally adequate diet day after day, over a long period. A study undertaken in a boarding school to test this point proved that they will.*

The regular school meals were supplemented with additional foods and the children lived on the improved diet for a full year. The regular school meals included, daily, one pint of milk, small amounts of meat, potatoes, fruit, and vegetables, as well as bread, one pat of butter and cereal. Each child received one egg weekly.

The supplements were available in the quantities desired and the amounts eaten varied with the age and size of the children. Minimum amounts supplied daily per child were: one pint of pasteurized vitamin D milk, one ounce of butter, and one serving of whole-grain or enriched cereal. On a weekly basis, five eggs, 3 ounces of cheese, and ten ounces of ice cream were added. Pineapple juice was available at all times.

The children, who ranged in age from 2 to 14 years, served as their own controls. They showed increased rate of growth and an improvement in nutritional status during the year of the study. Only 42 percent of the group made expected weight gains on the original school diet. On the supplemented diet 72 percent achieved expected gains. A similar improvement was noted in height gains.

On the supplemented diet, the average intake of virtually all nutrients equalled or bettered the Recommended Dietary Allowances of the National Research Council. Dairy foods made the greatest contribution of any food group toward increasing the adequacy of the *total diet*. They supplied sufficient amounts of calcium and riboflavin to meet the dietary goals for these two nutrients. They also supplied one-half of the daily allowances for protein and for vitamin A and one-fourth of the allowance for thiamine.

*Roberts, L. J., Blair, R., Greider, M. *Results of providing a liberally adequate diet to children in an institution.* J. Pediatrics 27:393:410:418 (Nov.) 1945

The presence of this seal indicates that all nutrition statements in the advertisement have been found acceptable by the Council on Foods and Nutrition of the American Medical Association.

ACCEPTED COUNCIL ON FOODS AND NUTRITION AMERICAN MEDICAL ASSOCIATION

National DAIRY COUNCIL
111 North Canal Street Chicago 6, Illinois

Since 1915 . . . the National Dairy Council, a non-profit organization, has been devoted to nutrition research and education to extend the use of dairy products.

Association Activities

Nevada, Welcome! The state of Nevada has just been added to the A.D.A. roster of affiliated state dietetic associations. The Nevada Dietetic Association consists of eleven charter members—congratulations! To date, forty-seven states, the District of Columbia, and the Territory of Hawaii are affiliated with the national Association.

New A.D.A. Publications. *The Adequate Low-Calorie Diet* is the title of our newest publication. This folder contains a sample menu plan, statistics on the nutrient content of the sample menu as compared with the Recommended Dietary Allowances of the National Research Council, and a summary of the daily food intake on a low-calorie diet. The data presented are based on the new figures given in the second revision of "Food composition table for short method of dietary analysis" by J. M. Leichsenring and E. D. Wilson (J. Am. Dietet. A., May, 1951). The pamphlet is also correlated with the forthcoming revision of the *Handbook of Diet Therapy*.

The pamphlet is available from the A.D.A. office at the following prices:

Single copy	$ .05
In lots of 25	.60
In lots of 100	2.00

Our list of *Publications and Reprints* has just been revised and reorganized. The new edition is larger and lists pamphlets and books, reprints, and mimeographed material available from the Association. This folder is available free of charge.

Alumnae Meals at Cleveland Annual Meeting. All dietetic internship, college, and other groups wishing reunion meals during the 34th Annual Meeting of A.D.A., October 9 through 12, are asked to select a representative to correspond with the alumnae meal chairman. Internship groups have been assigned Wednesday morning or noon, October 10; college groups, Thursday noon, October 11, or Friday morning, October 12. Morning meetings following breakfasts will begin promptly at 9 A.M.

Each representative and her group will assume full financial responsibility for the meal after final arrangements have been made with the alumnae meal chairman, Elsie Vargo, Lutheran Hospital, 2609 Franklin Blvd., Cleveland 13.

Our Representatives. Ruth Spencer served as A.D.A. representative at the 34th Annual Meeting of the American Council on Education, May 4 and 5, in Washington, D.C., at which Arthur S. Adams was installed as president.

Early in May, Helen A. Hunscher attended a meeting of the Food and Nutrition Board of the National Research Council as the Association's liaison representative.

Lillian S. Coover represented A.D.A. at a silver anniversary tea on June 3 in honor of Dr. Kate Daum of the State University of Iowa Hospital.

As a representative of A.D.A., Georgia Smith participated in a program on institution management, held at the American Home Economics Association convention in Cleveland, June 26 to 29.

Commercial Exhibits for A.D.A. Convention. Over 90 per cent of the exhibit space for the A.D.A. convention in Cleveland was sold by June 1.

Civil Defense. Every effort is being made to keep our members up to date on activities related to civil defense. The June issue of the *Courier* was devoted to the subject and contained a report by Dr. Coover of the Civil Defense Conference held in Washington, D.C., May 7 and 8, which she attended as one of our representatives. The *Courier* also contained a bibliography on civil defense.

A.D.A. Exhibits. Clara Zempel, Professional Activities Director for A.D.A., was our official representative at the meeting of the American Medical Association held in Atlantic City, June 11 to 15. (For description of exhibit, see Association Activities for June.)

The triennial meeting of the Pacific Coast Dental Conference was held in Seattle, June 25 to 28. Our exhibit, the "Diet of a Child 10–12 Years Old," was shown.

The exhibit, "Dietitians, Nutritionists—Serve the Community," was on display at the American Home Economics Association convention in Cleveland, June 26 to 29.

something old • something new in canny hospital improvement

• Not only are the workers more comfortable in the dish-washing department at Christ Hospital, Cincinnati, since the modernization . . . the director of dietetics and controller point with pride to the new high in sanitation and efficiency . . . *the improvement cost will be wiped out in three and a half years by savings in labor and dish-washing compound.*

• Although installed over 20 years ago, with a few modifications to fit the new model machines, the Van equipment is good for at least another 20 years or more, as the illustration depicts.

• Investigation might show *you* that replacements or modifications in your kitchen and service operations would improve efficiency, worker morale, *and pay for themselves.* Van would like to help you.

The John Van Range Co.

EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD

DIVISION OF THE EDWARDS MANUFACTURING CO.

Branches in Principal Cities

EGGLESTON AVENUE **CINCINNATI 2, OHIO**

MAKE NUTRITIOUS MEALS MORE DELICIOUS

COOKING WITH MAGGI'S GRANULATED BOUILLON is such an easy, economical way to spark the flavor of everyday dishes. All you do is dissolve it in hot water or add it directly to the cooking water. Rich in beefy goodness, Maggi's Granulated Bouillon brings out the full, natural flavor of meats, soups, sauces and gravies. Use it whenever recipes call for beef stock. Serve it frequently as an instant-quick broth, too.

MAGGI'S

The Nestlé Company, Inc.
Colorado Springs, Colorado

Granulated BOUILLON CUBES

ANOTHER MAGGI FLAVOR FAVORITE...
MAGGI'S SEASONING

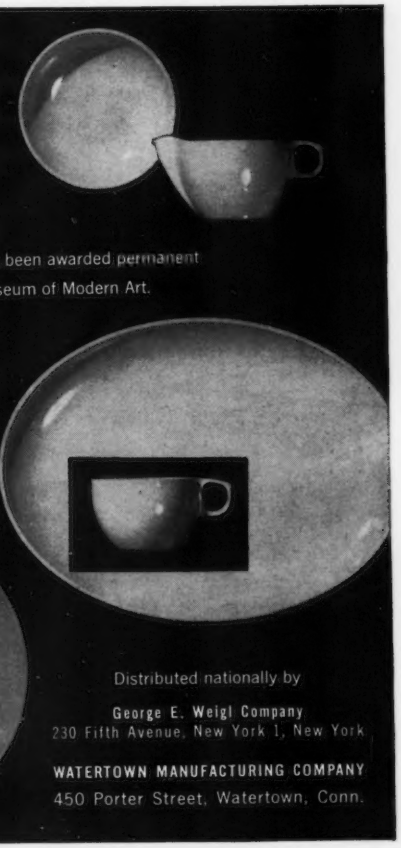
WHEREVER MEALS ARE SERVED TO MANY...
CUT COSTS WITH *Lifetime* WARE
the **complete** line of fine plastic dinnerware.

- *Practically indestructible*
- *Handles quietly*
- *Tasteless and odorless*
- *Wide choice of through and through colors*
- *Stacks and stores compactly*
- *Unaffected by boiling water, strong soaps or detergents*
- *Easily washed by hand or machine*
- *Keeps food hot or cold 3 times as long*

Here's beauty of design* and amazing durability in weighty plastic dinnerware manufactured of Melmac . . . In 6 through and through colors

BERMUDA CORAL — GRANADA GREEN
PALISADES GRAY — CARIBBEAN BLUE
SAHARA SAND — CANYON YELLOW

Want the complete story? Write for free descriptive folder today.



*Lifetime Ware has been awarded permanent display at the Museum of Modern Art.

Distributed nationally by
George E. Weigl Company
230 Fifth Avenue, New York 1, New York

WATERTOWN MANUFACTURING COMPANY
450 Porter Street, Watertown, Conn.

Get a FOLEY SILVER WASHER & DRIER

If you are looking for-

THE ONLY WAY TO GET QUANTITIES OF CLINICALLY CLEAN SILVERWARE

Test after test under actual operating conditions with ordinary help in institutional kitchens over a 3-year period prove that *Foley sterilizes silver by removing film* (not merely by killing bacteria and leaving dirt). Foley-washed silver showed a bacteria count of 0 that rose to 6 in four hours. Silver washed in dishwasher rose to a count 13,400 in four hours.

FULLY AUTOMATIC OPERATION Foley goes through washing-rinsing-drying cycle at single push of a button *using clean water*, 3 gallons per cycle for wash and rinse. The machine keeps itself clean.

NO TOWELING Foley-washed silver requires NO TOWELING because it is DRIED in the machine by electrically heated forced air.

HEALTH APPROVAL Health authorities everywhere approve and praise the Foley for doing a top job of sanitation on the all important eating utensils *that go into patrons' mouths* Keep abreast of modern sanitation by sending the coupon for the FREE article.

IMMEDIATE DELIVERY—All Models.
No substitution in materials.

Saves its cost in 2 to 6 months

The Foley is a Public Health Machine

FREE

Foley-Irish Corp., Dep't. AD-7
31 Washington Street
Brooklyn 1, N. Y.

Please send descriptive literature and reprint of article "Planning Top Sanitation of Eating Utensils" as published in *Modern Sanitation.*

NAME_____

ADDRESS_____

Army Announcements Concerning Dietetic Personnel

The following dietitians have received initial appointments in the Women's Medical Specialist Corps Reserve and are on active military duty:

1st Lt. Frances G. Adlis, R-20200
1st Lt. Grace E. Carpenter, R-20251
Capt. Judith E. P. Judd, R-20250
Capt. Edith Leidy, R-1057
1st Lt. Louise C. Zambrano, R-1088

The following dietitians are now on active military duty:

2nd Lt. Eunice M. Axtell, R-2352
1st Lt. Dorothy J. Barglof, R-2002
Capt. Grace M. Cables, R-1040
Maj. Helen B. Gearin, R-10000
1st Lt. Belle Young Grohs, R-1377
1st Lt. Charlotte H. Henry, R-2137
Capt. Gertrude A. Holt, R-817
1st Lt. Eileen L. Kelly, R-750
1st Lt. Elna C. Petersen, R-2357
1st Lt. Nancy O. Rowan, R-2497
1st Lt. Eileen D. Schill, R-2348
1st Lt. Charlotte R. Scripture, R-1079
1st Lt. Carol M. Stevenson, R-2112
Capt. Delma F. Thompson, R-342
1st Lt. Margaret L. Wakeman, R-2025
1st Lt. Eileen P. Welch, R-2423
Capt. Ardeth J. Wick, R-32
2nd Lt. Betty J. Wolfe, R-1235

The following dietitians have been promoted:

Second Lieutenants to Temporary First Lieutenants

Margaret L. Beck, R-2566
Dorothy L. Breland, R-2559
Charlotte N. Davis, R-2555
Patricia J. Evanhoe, R-2553
Marilynne E. Faust, R-2558
Martha E. Frazee, R-2562
Jean P. Galvin, R-2554
Florence M. Matty, R-2565
Barbara A. Stierle, R-2560
Ann W. Watson, R-2563
Eileen B. Witte, R-2556

First Lieutenants to Captains

Jean M. Hawkins, R-10093
Fuchsia L. Johnson, R-10023
Mary Lipscomb, R-10025
Althea L. Luttrell, R-10051
Jennie F. Quam, R-10053
Margaret E. Radke, R-10024
Annabel Watkins, R-10033

The following dietitians have received appointments in the Regular Army:

Captains

Mary Breazeale, R-10117
Kathryn V. Buck, R-10130
Dorothy M. Kaiser, R-10118
Cecelia T. Klainer, R-10135
Josephine C. Lydon, R-10123
Ester K. Rosenberg, R-10131
Evelyn G. Summers, R-10122
Mary L. Timerman, R-10125
Mary A. Tope, R-10126

First Lieutenants

Mildred E. Breimyer, R-10120
Jeanne R. Bowdish, R-10121
Marion E. Cook, R-10134
Sophia N. Obuhanych, R-10127
Catherine M. Ruane, R-10119

Second Lieutenants

Edith J. Herring, R-10129
Selna E. Kaplan, R-10136
Barbara M. Priceman, R-10138

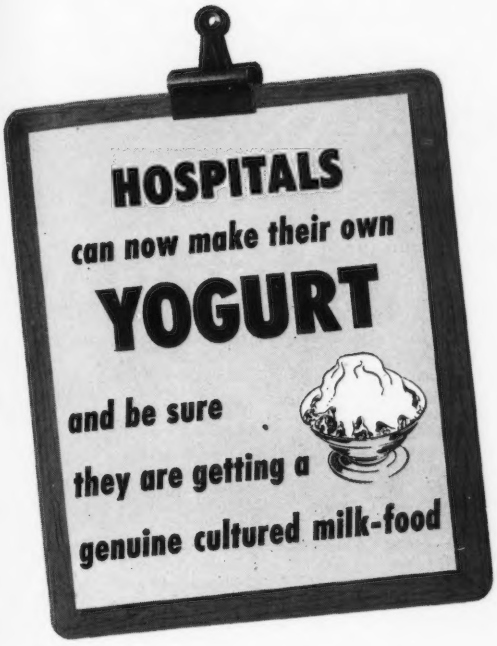
Listed below are the dietitians who have been separated from service:

1st Lt. Natalie I. Chester, R-958
2nd Lt. Marie C. F. Eberle, R-2561
1st Lt. Jean D. Hinman, R-2550
1st Lt. Anna W. Mangiaracina, R-2529
2nd Lt. Emilia R. Nielson, R-2586
2nd Lt. Ruth Violet Norton, R-2585
1st Lt. Margaret E. Squires, R-2491
Capt. Alma W. Thom, R-10056

New Appointments, Veterans Administration

The following hospital appointments of dietitians, not previously announced, have been made by the Veterans Administration.

Name	Position	Location
	Boston Area	
Mary V. AuBuchon	Staff Dietitian	Brooklyn, N. Y.
Helen Curtin	Staff Dietitian	Providence, R. I.
Miriam Eads	Staff Dietitian	Brooklyn, N. Y.
Jean Higgins	Staff Dietitian	Framingham, Mass.
Marion C. Jacobs	Staff Dietitian	Bedford, Mass.
Jeanne D. LaFayette	Staff Dietitian	Framingham, Mass.
Anne McGrane	Staff Dietitian	Bronx, N. Y.
Joyce M. Markle	Staff Dietitian	Castle Point, N. Y.
Margaret T. Moscone	Head Dietitian	Togus, Maine
Elinore I. Ridge	Staff Dietitian	Bronx, N. Y.
Dorothy G. Smith	Staff Dietitian	Framingham, Mass.
Bella Zaretsky	Staff Dietitian	Bronx, N. Y.



Because of the ever-widening interest in Yogurt, we have arranged for special air service of our

INTERNATIONAL YOGURT CULTURE

to hospitals all over America. Obviously, a Yogurt is only as good as the Culture from which it is made. Our Culture is potent, stable, tested. We have, for years, successfully shipped International Yogurt Culture to institutions, medical men and health-minded people all over the world.

The method of making is simplicity itself. You simply add this Culture to whole milk—right in your diet kitchens—according to simple directions. Result? Real Bulgarian Yogurt! Rich in lactic acid organisms. A milk-food of wide clinical application from pediatrics to geriatrics.

Why not send for a trial order and see for yourself what Yogurt can do to liven up your menus—and your patients? $1.80 (plus 20¢ for air mail) brings enough Culture to make a sizable amount of Yogurt. Order today! *Send for free clinical literature.*

NEW! The Electromatic THERMO-CULT YOGURT INCUBATOR

This *electric* incubator enables an institution to make its own Yogurt—quickly and scientifically. Makes 4 quarts in individual serving containers—and makes perfect Bulgarian Yogurt *everytime*. Automatic; fool-proof; easy to clean; works on AC or DC current. Only $14 complete.

Order from **International Yogurt Co.,** Dept. J7
8377 Melrose Ave., Los Angeles 46

The newest
dishwasher
sensation!
No cumbersome dish racks—dishes, etc., placed directly on conveyor
Glasses are placed on conveyor without a basket
This All Nylon conveyor won't mark or chip my dishes
These cleanout and inspection doors on the front are time savers
Large scrap baskets for better straining — Don't have to be emptied so often
Blakeslee 85PT

Blakeslee, the pioneer dishwasher manufacturer, again leads the way in improved performance and convenience with their new 85PT models. Greater accessibility to all parts of the machine from one side adds to the ease of cleaning and inspection and saves many man hours. Upper and lower sprays in all tanks subject dishes to thorough washing at properly controlled temperatures. Dishes, cups, bowls and glasses are washed directly on the molded nylon conveyor which rolls on rollers on an extruded brass track. Send for full facts on this amazing new dishwasher.

BLAKESLEE
KITCHEN MACHINES
DISHWASHERS • PEELERS • MIXERS • FOOD CHOPPERS AND ACCESSORIES

New York G. S. BLAKESLEE & CO., 1844 SO. 52nd AVE., CHICAGO 50, ILL. Toronto

How to Increase Nutrition
— within your budget

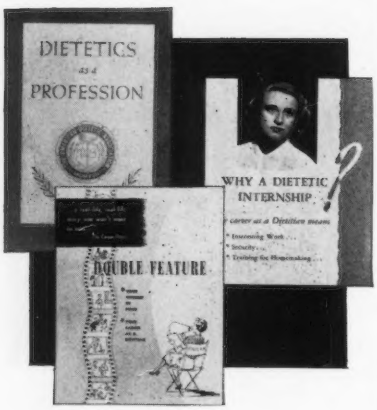
NONFAT DRY MILK SOLIDS...
Aids in Quantity Cooking

Use of nonfat dry milk solids in many recipes adds to nutrition, flavor and appearance . . . without exceeding the allowable cost per meal. In this way, more milk nutrients can be incorporated than is possible with liquid milk.

Write for latest set of recipe cards featuring popular dishes prepared with nonfat dry milk solids.

MILK SOLIDS MAKES THE DIFFERENCE!

AMERICAN DRY MILK INSTITUTE, Inc.
221 N. La SALLE STREET, CHICAGO



Dietetics as a Profession gives detailed information concerning the qualifications and opportunities for dietitians. Price 25 cents.

Why a Dietetic Internship? explains the importance of a year's internship and describes the activities of a dietetic intern. Price 5 cents; in lots of 25—$.75.

Double Feature was written specifically for the high school girl, and describes simply, with the aid of clever illustrations, the various opportunities offered in a dietetic career. Single copy free; in lots of 100—$1.50.

Send your order and remittance to:

THE AMERICAN DIETETIC ASSOCIATION
620 North Michigan Ave. Chicago 11, Illinois

Veterans Administration Appointments, Concluded

Name	Position	Location
	Washington, D. C. Area	
Kathleen Alexander	Staff Dietitian	Roanoke, Va.
Ellen L. Bower	Staff Dietitian	Chillicothe, Ohio
Katherine L. Caprio	Staff Dietitian	Perry Point, Md.
Mary F. Donini	Staff Dietitian	Cleveland, Ohio
Vera Fichter	Staff Dietitian	Aspinwall, Pa.
Hilda Frank	Head Dietitian	Outwood, Ky.
Helen Ranere Gay	Staff Dietitian	Lebanon, Pa.
Gertrude Brown Godfrey	Assistant Chief Dietitian	Martinsburg, W. Va.
Helen Louise Harper	Head Dietitian	Roanoke, Va.
Helen Hoffman	Head Dietitian	Wilkes-Barre, Pa.
Louise Jagus	Staff Dietitian	Brecksville, Ohio
Mary S. Jones	Staff Dietitian	Lexington, Ky.
Mary L. Katinis	Staff Dietitian	Coatesville, Pa.
Harriett J. Kidd	Staff Dietitian	Martinsburg, W. Va.
Mildred Klahn	Staff Dietitian	Ft. Benjamin Harrison, Ind.
Helen J. McMillen	Staff Dietitian	Richmond, Va.
Mary Helen Mill	Staff Dietitian	Clarksburg, W. Va.
Sarah E. Murphy	Staff Dietitian	Lyons, N. J.
Cecilia L. Overbey	Staff Dietitian	Marion, Ind.
Carmela Sarry	Staff Dietitian	Wilkes-Barre, Pa.
Anna M. Shevock	Staff Dietitian	Altoona, Pa.
Joanne M. Tweedy	Staff Dietitian	Marion, Ind.
Charlene E. Walsh	Staff Dietitian	Lexington, Ky.
Elizabeth L. Zimmerman	Staff Dietitian	Marion, Ind.
	Atlanta Area	
Margaret Elizabeth Bowden	Staff Dietitian	Kennedy, Memphis, Tenn.
Delree E. Brown	Staff Dietitian	Oteen, N. C.
Lauretta Head	Staff Dietitian	Oteen, N. C.
Ruth T. Hooper	Staff Dietitian	Oteen, N. C.
Bonnie L. Jones	Staff Dietitian	Mountain Home, Tenn.
Moselle Peay	Staff Dietitian	Nashville, Tenn.
Dorothy B. Ross	Staff Dietitian	Bay Pines, Fla.
Kathryn F. Ross	Staff Dietitian	Tuskegee, Ala.
Marion Alice Wolff	Staff Dietitian	Lake City, Fla.
	St. Louis Area	
Rosamond T. Acker	Staff Dietitian	Ft. Lyon, Colo.
Jean H. Albert	Staff Dietitian	Topeka, Kans.
Clara Avera	Staff Dietitian	McKinney, Tex.
Caroline Babo	Staff Dietitian	Temple, Tex.
Beverly B. Brown	Staff Dietitian	Alexandria, La.
Gladys Morris Burks	Staff Dietitian	Muskogee, Okla.
M. Patricia Burgess	Staff Dietitian	Muskogee, Okla.
Mary Margaret Carroll	Staff Dietitian	Jefferson Barracks, Mo.
Macey Lee Dorsey	Head Dietitian	Shreveport, La.
June E. Eakins	Staff Dietitian	Dallas, Tex.
Mary C. Goodell	Staff Dietitian	Topeka, Kans.
Anne Collins Heath	Head Dietitian	Excelsior Springs, Mo.
Mary Ann Kroner	Staff Dietitian	Springfield, Mo.
Dorothy A. Miller	Staff Dietitian	Wichita, Kans.
Hazel Mouton Neef	Staff Dietitian	Houston, Tex.
Betty J. Parks	Staff Dietitian	Fayetteville, Ark.
Merlene C. Paxton	Staff Dietitian	Alexandria, La.
Eula Fannie Willis	Staff Dietitian	Kerrville, Tex.
Martha E. Willis	Staff Dietitian	McKinney, Tex.
Thelma K. Wilson	Staff Dietitian	Alexandria, La.
	Fort Snelling, Minnesota Area	
Marjorie Anderson	Staff Dietitian	Minneapolis, Minn.
Elaine L. Avery	Staff Dietitian	Sheridan, Wyo.
Mary A. Brown	Staff Dietitian	Downey, Ill.
Louise J. Christianson	Staff Dietitian	Ft. Harrison, Mont.
Ethel Lambentz Dietz	Staff Dietitian	Fargo, N. Dak.
Josephine Driscoll	Staff Dietitian	Downey, Ill.
Helen I. Frauenhoffer	Staff Dietitian	Downey, Ill.
Ruth Helen Lange Hendrix	Staff Dietitian	Knoxville, Iowa
Frances McShane	Staff Dietitian	Downey, Ill.
Esther Hamil Miller	Staff Dietitian	Hines, Ill.
Mary K. Nelis	Staff Dietitian	Ft. Custer, Mich.
Mrs. Howard Payne	Staff Dietitian	Des Moines, Iowa
Martha L. Riggs	Head Dietitian	Clinton, Iowa
Betty Schaefer	Staff Dietitian	Minneapolis, Minn.
Mary K. Shannon	Staff Dietitian	Hines, Ill.
	San Francisco Area	
Leona Biro	Staff Dietitian	Los Angeles, Calif.
Ila Mae Gilbert	Staff Dietitian	Oakland, Calif.
Ruth P. Heidenreich	Head Dietitian	Spokane, Wash.
Avonelle M. Holm	Staff Dietitian	Portland, Ore.
Barbara M. Hurwitz	Staff Dietitian	Long Beach, Calif.
Marion Jensen	Staff Dietitian	San Fernando, Calif.
Margaret V. McLoone	Staff Dietitian	Los Angeles, Calif.
Joan A. Montgomery	Staff Dietitian	Long Beach, Calif.
Frances L. Smith	Staff Dietitian	Los Angeles, Calif.
Ethel Marie Snider	Staff Dietitian	Salt Lake City, Utah
Kathryn M. Tondreau	Staff Dietitian	Los Angeles, Calif.
Sarah F. Williams	Head Dietitian	Los Angeles, Calif.
Bernice L. Worth	Head Dietitian	Roseburg, Ore.
Dorotha D. Wyatt	Staff Dietitian	Los Angeles, Calif.